McINTOSH PERRY

April 19, 2021

Circle K – Central Canada Division
305 Milner Avenue
Suite 400, Toronto, ON M1B 3V4

Via Email: joe@samanagement.ca; Joel.Jon@CircleK.com

Re: Environmental Update and Summary of Groundwater Quality Testing, Circle K Retail Fuel Outlet, 1545 Woodroffe Avenue, Ottawa, Ontario (Our File: CCO-21-2432-06)

McIntosh Perry was retained Circle K – Central Canada Division ("the Client") to assist with an application for Site Plan Approval (SPA) to redevelop the property addressed as 1545 Woodroffe Avenue, Ottawa, Ontario ("the Site"). As part of the SPA process, the City of Ottawa requires Phase One and Two Environmental Site Assessments (ESA). To date several ESAs have been completed at the property as well as other environmental investigations (listed below)

As part of the process McIntosh Perry reviewed previous environmental reports and groundwater analytical testing results, completed a groundwater sampling event at selected existing monitoring wells at the Site and prepared this letter report for submission with the existing ESA reports.

The Site is currently occupied by an active retail fuel outlet and car wash, as well as a vacant commercial building formerly occupied by a Tim Horton's restaurant. It has been the subject of environmental remediation over the years and the present environmental conditions are understood as noted in this letter.

PREVIOUS REPORTS

The following reports by others were available for review and will be included in the SPA package:

- "Fuel Distribution System Upgrade and Remedial Excavation, 1545 Woodroffe Avenue (at Medhurst Drive), Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated October 13, 2009.
- "Phase II Environmental Site Assessment, 1545 Woodroffe Avenue (at Medhurst Drive), Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated October 13, 2009.
- "Supplementary Phase II Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated June 25, 2010.
- "Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated January 17, 2012.
- "Subsurface Investigation, Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental Inc., dated October 11, 2012

- "Contaminant Management Plan, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by Parsons Canada Ltd., dated February 21, 2013.
- "Soil Vapour Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by O'Connor Associates Environmental, Inc., dated April 2, 2014.
- "Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by Parsons Canada Ltd., dated April 9, 2015.
- "Phase I Environmental Site Assessment, 1545 Woodroffe Avenue, Nepean, Ontario", prepared by SNC-Lavalin, dated July 2015.
- "Groundwater Monitoring and Sampling Data Package, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by Parsons Canada Ltd., dated August 5, 2015
- "Groundwater Monitoring and Sampling Report, IOL Site No. 302287, 1545 Woodroffe Avenue, Ottawa, Ontario", prepared by WSP Canada Inc., dated June 15, 2016.

It is noted that a detailed peer review of these reports is beyond the scope of the current letter. Rather, this report focuses on the current groundwater quality at the Site and the changes in groundwater quality over time, as discussed in detail in following sections.

2021 WELL INSPECTION AND SAMPLING EVENT

A preliminary inspection of existing monitoring wells on-Site was completed by Mr. Dan Arnott of McIntosh Perry on March 17, 2021: The following existing on-site monitoring wells were selected for sampling based on the most recent groundwater monitoring events by Parsons and WSP. The status of the wells as of March 17, 2021 is summarized in the following table:

BH ID	Condition (March 17, 2021)
BH-5	Casing in good condition; equipment present downhole. Sampled.
BH-6	Casing in good condition but full of frozen bentonite; J-plug loose. Sampled.
BH-7	Casing and well in good condition. Sampled.
BH-8	Casing and well in good condition. Sampled.
BH-9	Casing and well in good condition. Sampled.
BH-10	Casing openable but well filled with bentonite. Not sampled.
BH-11	Casing and well in good condition. Sampled.
BH-12	Casing in good condition; J-plug loose, bentonite frozen. Not sampled.
BH-13	Casing and well in good condition. Sampled.
BH-14	Could not locate initially (under pile of snow). Found in good condition during sampling event. Sampled.

BH ID	Condition (March 17, 2021)
BH-15	Casing and well in good condition. Sampled.
BH-16	Destroyed. Not Sampled.

Serviceable wells were sampled by Mr. Fares Masoumzadeh, EIT of McIntosh Perry on March 25, 2021.

The static water level was measured at each well using an electronic water level tape. Headspace vapour readings were measured using an RKI Eagle 2 combustible gas detector. Three (3) well volumes were purged using inertial lift tubing, and groundwater samples were placed into laboratory-provided containers. All groundwater samples were submitted to AGAT Labs of Ottawa, Ontario for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX) and petroleum hydrocarbons, fractions 1 through 4 (PHC F1-F4).

Groundwater sampling was completed in general accordance with the document titled "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", prepared by MOE, now MECP, dated May 1996.

Groundwater results were compared to the following Site Condition Standards for the purposes of this report, from the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" prepared by the former Ontario Ministry of the Environment (present-day MECP), dated April 15, 2011:

- Table 3 Full-Depth Generic Site Condition Standards for Industrial/Commercial/Community Land Use and Residential/Parkland/Institutional Land Use in a Non-Potable Groundwater Condition and medium-fine grained soil texture.

Sample results are summarized in the following sections.

RESULTS AND DISCUSSION

Monitoring Well Headspace Vapour Readings

Headspace vapour readings in the monitoring wells sampled during the March 25, 2021 sampling event ranged from 0 to 610 ppm, indicative of low to moderate levels of subsurface vapour impacts. The highest headspace vapour readings were observed at BH-7, BH-8, and BH-15, located to the east and northeast of the pumps, tanks, and convenience store building.

Monitoring well headspace vapour readings (historical and current) are summarized in Table 2, appended to this report.

Historical vapour readings indicate numerous measurements within the lower explosive limit (LEL) range, indicating significantly higher headspace vapour readings which appear to have attenuated over time. Various historical headspace vapour readings were in excess of 100% LEL, particularly at BH6 between 2010 and 2014.

BH7, where relatively high headspace vapour readings were observed in 2021, had historically shown lower readings compared to nearby wells. BH8 showed a similar trend. BH8 and BH9 both exhibited unusually high headspace vapour readings in July 2014 (>100% LEL) but have not exhibited similar readings since that time. It is also noteworthy that BH13, which historically had several readings of >100% LEL, showed 0 ppm of headspace vapours in 2021.

Groundwater Quality

The following groundwater exceedances and historical trends were identified at the monitoring well locations sampled during the 2021 monitoring program:

- BH-5:
  - PHC F1 (11,000 ug/L) exceeded Table 3 SCS; generally consistent with historical range (268-24,000 ug/L)
  - PHC F2 (650 ug/L) exceeded Table 3 SCS; generally consistent with historical range (580-14,800 ug/L) but lower than most historical values.
  - PHC F3 (2,100 ug/L) exceeded Table 3 SCS; generally consistent with historical range (<100-3,820 ug/L)
  - PHC F4 (730 ug/L) exceeded Table 3 SCS; generally consistent with historical range (<100-3,680 ug/L)
  - Benzene (<0.20 ug/L) met Table 3 SCS; generally consistent with historical range (<0.20-120 ug/L)
  - Ethylbenzene (23.9 ug/L) met Table 3 SCS; generally consistent with historical range (0.35-390 ug/L)
  - Toluene (<0.20 ug/L) met Table 3 SCS; slightly lower than historical range (23.9-2,800 ug/L)
  - Xylenes (25.1 ug/L) met Table 3 SCS; slightly lower than historical range (25.1-9,600 ug/L)
  - In general, contaminant concentrations at BH-5 are generally holding steady or decreasing slightly. Intermittent BTEX exceedances noted in historical data were not observed in 2021.
- BH-6
  - PHC F1 (1,820 ug/L) exceeded Table 3 SCS; slightly lower than historical range (1,990-16,000 ug/L)
  - PHC F2 (320 ug/L) exceeded Table 3 SCS; slightly lower than historical range (380-2,600 ug/L)
  - PHC F3 (740 ug/L) exceeded Table 3 SCS; generally consistent with historical range (<100-2,800 ug/L)
  - PHC F4 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100-730 ug/L)
  - Benzene (25 ug/L) met Table 3 SCS; slightly lower than historical range (34-450 ug/L)

  - Ethylbenzene (186 ug/L) met Table 3 SCS; slightly lower than historical range (209-2,500 ug/L)
  - Toluene (1.9 ug/L) met Table 3 SCS; slightly lower than historical range (2.5-74 ug/L)
  - Xylenes (339 ug/L) met Table 3 SCS; slightly lower than historical range (355-5,200 ug/L)
  - In general, a slight decrease in contaminant concentrations is noted at BH-5.

- BH-7
  - PHC F1 (<25 ug/L) met Table 3 SCS; generally consistent with historical range (<25 ug/L)
  - PHC F2 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - PHC F3 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - PHC F4 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - Benzene (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2-25 ug/L)
  - Ethylbenzene (0.14 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2-1.9 ug/L)
  - Toluene (<0.2) met Table 3 SCS; generally consistent with historical range (<0.2-186 ug/L)
  - Xylenes (<0.4) met Table 3 SCS; generally consistent with historical range (<0.4-5.6 ug/L)
  - BTEX concentrations at this location have generally been below laboratory detection limits since 2011. PHC concentrations have been below laboratory detection limits since monitoring data began in 2008.

- BH-8
  - PHC F1 (1,490 ug/L) exceeded Table 3 SCS; generally consistent with historical range (460-2,000 ug/L)
  - PHC F2 (250 ug/L) exceeded Table 3 SCS; generally consistent with historical range (180-820 ug/L)
  - PHC F3 (140 ug/L) met Table 3 SCS; generally consistent with historical range (<100-1,080 ug/L)
  - PHC F4 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100-3,190 ug/L)
  - Benzene (25.9 ug/L) met Table 3 SCS; generally consistent with historical range (12.2-140 ug/L)
  - Ethylbenzene (194 ug/L) met Table 3 SCS; generally consistent with historical range (140-610)
  - Toluene 0.57 ug/L) met Table 3 SCS; slightly lower than historical range (2.2-107 ug/L)
  - Xylenes (116 ug/L) met Table 3 SCS; generally consistent with historical range (8.1-180 ug/L)

- BH-9
  - PHC F1 (<25 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - PHC F2 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)

  - PHC F3 (<100 ug/L) exceeded Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - PHC F4 (<100 ug/L) exceeded Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - Benzene (<0.2 ug/L) exceeded Table 3 SCS; generally consistent with historical range (<0.2 ug/L)
  - Ethylbenzene (<0.2 ug/L) exceeded Table 3 SCS; generally consistent with historical range (<0.2 ug/L)
  - Toluene (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2-1.0 ug/L)
  - Xylenes (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2 ug/L)
  - With the exception of a toluene detection in 2010, results at this location have consistently been below detection limits and therefore in compliance with Table 3 SCS.
- BH-11
  - PHC F1 (960 ug/L) exceeded Table 3 SCS; generally consistent with historical range (490-17,500 ug/L)
  - PHC F2 (1,700 ug/L) exceeded Table 3 SCS; generally consistent with historical range (120-3,230 ug/L)
  - PHC F3 (290 ug/L) met Table 3 SCS; slightly higher than historical range (<200 ug/L)
  - PHC F4 (<100) met Table 3 SCS; generally consistent with historical range (<200 ug/L)
  - Benzene (5.89 ug/L) met Table 3 SCS; generally consistent with historical range (0.7-110 ug/L)
  - Ethylbenzene (53.2 ug/L) met Table 3 SCS; generally consistent with historical range (20-928 ug/L)
  - Toluene (0.44 ug/L) met Table 3 SCS; slightly lower than the historical range (4.1-525 ug/L)
  - Xylenes (48.9 ug/L) met Table 3 SCS; generally consistent with historical range (<0.5-2,200 ug/L)
  - Overall, concentrations at this location were generally consistent with historical levels.
- BH-13
  - PHC F1 (410 ug/L) exceeded Table 3 SCS; lower than historical range (2,100-6,340 ug/L)
  - PHC F2 (<100 ug/L) met Table 3 SCS; lower than historical range (270-1,000 ug/L)
  - PHC F3 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100-160 ug/L)
  - PHC F4 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100-590 ug/L)
  - Benzene (2.0 ug/L) met Table 3 SCS; slightly lower than historical range (4.1-65 ug/L)
  - Ethylbenzene (109 ug/L) met Table 3 SCS; slightly lower than historical range (340-1,290 ug/L)
  - Toluene (0.75ug/L) met Table 3 SCS; slightly lower than historical range (26-76.2 ug/L)
  - Xylenes (13.5 ug/L) exceeded Table 3 SCS; lower than historical range (700-1,250 ug/L)

- BH-14
  - PHC F1 (32 ug/L) met Table 3 SCS; generally consistent with historical range (31-190 ug/L)
  - PHC F2 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - PHC F3 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<200 ug/L)
  - PHC F4 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<200 ug/L)
  - Benzene (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (3.7-12 ug/L)
  - Ethylbenzene (0.14 ug/L) met Table 3 SCS; slightly lower than historical range (19-75 ug/L)
  - Toluene (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2-0.31 ug/L)
  - Xylenes (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.4 ug/L)
  - In general, results at this location were consistent with historical results, which have consistently been in compliance with Table 3 SCS.
- BH-15
  - PHC F1 (<25 ug/L) met Table 3 SCS; generally consistent with historical range (<25 ug/L)
  - PHC F2 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - PHC F3 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - PHC F4 (<100 ug/L) met Table 3 SCS; generally consistent with historical range (<100 ug/L)
  - Benzene (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2 ug/L)
  - Ethylbenzene (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2 ug/L)
  - Toluene (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2 ug/L)
  - Xylenes (<0.2 ug/L) met Table 3 SCS; generally consistent with historical range (<0.2 ug/L)
  - Results at this location have consistently been below laboratory detection limits.

DISCUSSION

The following monitoring well locations exceed MECP Table 3 SCS for one or more BTEX/PHC parameters: BH-5, BH-6, BH-8, BH-11, BH13. These monitoring wells are generally located in the central portion of the Site, in the vicinity of the current pump island. BTEX/PHC concentrations in monitoring well locations further north of the retail fuel outlet area (BH-9, BH-14, and BH-15) met Table 3 SCS. It is also noted that BH-7 concentrations met Table 3 SCS, despite being located between BH-6 and BH-8, both of which showed exceedances of Table 3 SCS in groundwater. Limited groundwater monitoring data were available to the south of the retail fuel outlet and adjacent to Medhurst Avenue.

Concentrations of BTEX and PHCs in groundwater at the Site were generally consistent with previous monitoring events or were decreasing, indicating that natural attenuation of contaminants may be occurring.

The concentration of PHC F3 at BH-11 was observed to increase with respect to historical results; however, this did not represent a significant increase, and all other parameter concentrations at this location were consistent with historical results.

Groundwater elevation contour mapping was not undertaken as part of this assessment.

SUMMARY AND CONCLUSIONS

The groundwater sampling program conducted in the spring of 2021 indicated that subsurface conditions were generally consistent with previous monitoring events or were decreasing, indicating that natural attenuation of contaminants may be occurring. Off-site impacts are unlikely, however McIntosh Perry's work did not involved delineation of concentrations in the subsurface.

The existing ESA reports by others and the results of the 2021 groundwater sampling adequately meet the requirements for a Phase One and Two ESA for this Site as required by the City of Ottawa. As the use of this property will be unchanged (commercial fuel outlet, carwash and retail store), a Record of Site Condition is not required.

During construction, a Contaminant Management Plan will be required to ensure proper handling of any contaminated materials encountered during the redevelopment work. This will probably include soil and groundwater. There is sufficient information in this report and the referenced report to prepare such a Plan.

We trust that this information is satisfactory for your present requirements. Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Respectfully submitted,

McIntosh Perry

Dan Arnott, P.Eng.
Geo-Environmental Engineer
(613) 714-4589
d.arnott@mcintoshperry.com

LEGEND

- Approximate Parcel Boundary
- Borehole/Monitoring Well Location
- 2021 GW sampling results meet MECP Table 3 SCS
- 2021 GW sampling results exceed MECP Table 3 SCS
- Not Sampled
- Destroyed

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

20 10 0 20

Scale 1:800 Metres

CLIENT: CIRCLE K

PROJECT: GROUNDWATER SAMPLING PROGRAM
1545 WOODROFFE AVENUE, OTTAWA, ON

TITLE: 2021 GROUNDWATER QUALITY RESULTS

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-21-2432-06
Date	Apr., 16, 2021
GIS	EU
Checked By	DA

FIGURE: 1

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-2432-06 Circle K - 1545 Woodroffe Ave\prx\Env\CCO-21-2432-06_01_GroundwaterSamplingProgram.aprx

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Headspace Vapour Readings

Borehole/Sample ID	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5	BH-5
Date	19-Nov-08	11-Dec-08	12-May-09	16-Mar-10	03-Jun-10	23-Jul-10	17-Nov-10	27-Jun-11	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21
Headspace Vapour Readings (ppm if not indicated)	20%	20%	95	75	5%	10%	5%	5%	8%	23%	120	ND	30%	ND	15%	45

* Indicates Duplicate Sample
- Indicates No Data Available

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Headspace Vapour Readings

Borehole/Sample ID	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6	BH-6
Date	19-Nov-08	11-Dec-08	12-May-09	16-Mar-10	03-Jun-10	23-Jul-10	17-Nov-10	27-Jun-11	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21
Headspace Vapour Readings (ppm if not indicated)	25%	>100%	11%	25%	>100%	5%	>100%	>100%	5%	40%	ND	ND	>100%	ND	ND	55

* Indicates Duplicate Sample
- Indicates No Data Available

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Headspace Vapour Readings

Borehole/Sample ID	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7	BH-7
Date	19-Nov-08	11-Dec-08	12-May-09	16-Mar-10	03-Jun-10	23-Jul-10	17-Nov-10	27-Jun-11	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21
Headspace Vapour Readings (ppm if not indicated)	150	225	160	50	75	100	150	120	180	150	75	ND	10	ND	<5	450

* Indicates Duplicate Sample
- Indicates No Data Available

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Headspace Vapour Readings

Borehole/Sample ID	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8	BH-8
Date	16-Mar-10	03-Jun-10	23-Jul-10	17-Nov-10	27-Jun-11	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21
Headspace Vapour Readings (ppm if not indicated)	75	75	150	150	140	175	5%	>100%	ND	88%	ND	31%	610

* Indicates Duplicate Sample
- Indicates No Data Available

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Headspace Vapour Readings

Borehole/Sample ID	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9	BH-9
Date	16-Mar-10	03-Jun-10	23-Jul-10	17-Nov-10	27-Jun-11	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21
Headspace Vapour Readings (ppm if not indicated)	25	25	25	50	<5	60	80	ND	ND	>100%	ND	ND	35

* Indicates Duplicate Sample
- Indicates No Data Available

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Headspace Vapour Readings

Borehole/Sample ID	BH-11	BH-11	BH-11	BH-11	BH-11	BH-11	BH-11	BH-11	BH-11	BH-11	BH-11	BH-11	BH-13	BH-13	BH-13	BH-13	BH-13	BH-13	BH-13	BH-13
Date	16-Mar-10	03-Jun-10	23-Jul-10	17-Nov-10	27-Jun-11	31-Oct-11	13-Jun-12	16-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21
Headspace Vapour Readings (ppm if not indicated)	5%	500	15%	15%	325	16%	22%	27%	20%	>100%	NM	>100%	17%	40%	50%	70%	>100%	NM	>100%	0

* Indicates Duplicate Sample
- Indicates No Data Available

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Headspace Vapour Readings

Borehole/Sample ID	BH-14	BH-14	BH-14	BH-14	BH-14	BH-14	BH-14	BH-14	BH-15	BH-15	BH-15	BH-15	BH-15	BH-15	BH-15	BH-15
Date	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21	31-Oct-11	13-Jun-12	17-Oct-13	07-Apr-14	16-Jun-14	15-Dec-14	10-Jun-15	25-Mar-21
Headspace Vapour Readings (ppm if not indicated)	12%	50%	75%	NM	15%	NM	<5	185	400	215	65	ND	120	ND	25	310

* Indicates Duplicate Sample
- Indicates No Data Available

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Petroleum Hydrocarbons (PHCs)

Parameter	Units	RDL	Borehole/Sample ID	BH-5	BH-5	BH-5	BH-5*	BH-5	BH-5	BH-5	BH-5	BH-5	BH-6	BH-6	BH-6	BH-6*	BH-6	BH-6*
			Sample Date	11-Dec-08	16-Mar-10	31-Oct-11	31-Oct-11	13-Jun-12	18-Jun-14	16-Jun-15	21-Apr-16	25-Mar-21	16-Mar-10	31-Oct-11	14-Jun-12	14-Jun-12	25-Mar-21	25-Mar-21
			Table 3 Standards															
Petroleum Hydrocarbons (PHCs)																		
Benzene	ug/L	0.2	430	41	<4	48	41	50	120	100	89.6	<0.20	450	440	210	200	34.0	25.0
Toluene	ug/L	0.2	18000	61	9	<2	<2	5.5	8.8	7.7	5.1	<0.20	47	74	41	40	2.5	1.9
Ethylbenzene	ug/L	0.2	2300	2500	2800	1400	1300	2000	1500	1100	894	23.9	1500	2500	1700	1700	209	186
0-Xylene	ug/L	0.2	-	390	290	140	130	150	230	190	135	0.35	240	650	790	780	61.5	46.3
p+m-Xylene	ug/L	0.4	-	8100	9300	2900	2600	4000	4700	3600	3390	24.7	3300	4600	3400	3400	293	293
Total Xylenes	ug/L	0.4	4200	8500	9600	3100	2700	4200	5000	3800	3520	25.1	3500	5200	4200	4100	355	339
Hexane	ug/L	5.0	520	ND	ND	ND	ND	<50	ND	ND	14	ND	ND	ND	73	73	ND	ND
F1 (C6 to C10)	ug/L	100	750	20000	24000	9500	8600	16000	16000	11000	14800	268	11000	16000	14000	12000	1990	1820
F1 (C6 to C10) - minus BTEX	ug/L	100	750	9100	11000	5000	4500	9600	9800	6200	ND	219	5600	7800	7600	6300	1390	1270
F2 (C10 to C16)	ug/L	100	150	1200	4900	2700	ND	3100	3700	5100	14800	580	650	2300	2600	ND	380	320
F3 (C16 to C34)	ug/L	100	500	<100	240	<100	ND	<100	<200	<200	3820	370	2100	<100	<100	ND	780	740
F4 (C34 to C50)	ug/L	100	500	<100	<100	<100	ND	<100	<200	<200	3680	<100	730	<100	<100	ND	<100	<100
F1 + F2	ug/L	100	-	10000	16000	7700	ND	ND	ND	ND	ND	ND	6300	10000	ND	ND	ND	ND
F3 + F4	ug/L	100	-	<100	240	<100	ND	ND	ND	ND	ND	ND	2800	<100	ND	ND	ND	ND
Lead	ug/L	<0.5	25	<0.5	<0.5	ND	ND	ND	0.95	<0.5	ND	ND	<0.5	<0.5	0.67	ND	ND	ND
Acetone	ug/L	30	130000	ND	ND	ND	ND	ND	ND	ND	<30	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	0.3	85000	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	0.4	770	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.5	56	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/L	0.2	8.4	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.2	630	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	0.5	22	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	0.3	82000	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,2-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,3-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,4-	ug/L	0.4	67	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/L	0.5	4400	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND	ND
Dichloroethane, 1,1-	ug/L	0.4	3100	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Dichloroethane, 1,2-	ug/L	0.2	12	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,1-	ug/L	0.5	17	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-cis-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-trans-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,2-	ug/L	0.5	140	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,3-	ug/L	0.2	45	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-cis-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-trans-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND
Ethylene dibromide	ug/L	0.2	0.83	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND
Methyl Ethyl Ketone	ug/L	10	1500000	ND	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	ug/L	10	580000	ND	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	ug/L	2	1400	ND	ND	ND	ND	ND	ND	ND	<2	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	4	5500	ND	ND	ND	ND	ND	ND	ND	<4	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	0.5	9100	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,1,2-	ug/L	0.5	28	ND	ND	ND	ND	ND	ND	ND	31.0	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,2,2-	ug/L	0.5	15	ND	ND	ND	ND	ND	ND	ND	0.8	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND	ND
Trichloroethane 1,1,1,-	ug/L	0.4	6700	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Trichloroethane 1,1,2,-	ug/L	0.4	30	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND	ND
Trichlorofluromethane	ug/L	0.5	2500	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ug/L	0.2	1.7	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND	ND

* - Indicates Duplicate Sample
ND - Indicates No Data Available
Exceeds Table 3 Guidelines: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Medium and Fine Soils
Exceeds Reportable Detection Limit

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Petroleum Hydrocarbons (PHCs)

Parameter	Units	RDL	Borehole/Sample ID	BH-7	BH-7*	BH-7	BH-7	BH-7	BH-7*	BH-7	BH-7*	BH-7	BH-7*	BH-7
			Sample Date	11-Dec-08	11-Dec-08	16-Mar-10	31-Oct-11	13-Jun-12	13-Jun-12	17-Jun-14	17-Jun-14	16-Jun-15	16-Jun-15	25-Mar-21
			Table 3 Standards											
Petroleum Hydrocarbons (PHCs)														
Benzene	ug/L	0.2	430	<0.2	<0.2	<0.2	<0.2	<0.2	ND	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	ug/L	0.2	18000	1.3	1.3	<0.2	<0.2	<0.2	ND	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	ug/L	0.2	2300	0.8	0.9	<0.2	<0.2	<0.2	ND	<0.2	<0.2	<0.2	<0.2	0.14
0-Xylene	ug/L	0.2	-	1.8	1.9	<0.2	<0.2	<0.2	ND	<0.2	<0.2	<0.2	<0.2	<0.2
p+m-Xylene	ug/L	0.4	-	3.4	3.7	0.6	<0.4	<0.4	ND	<0.4	<0.4	<0.4	<0.4	<0.2
Total Xylenes	ug/L	0.4	4200	5.2	5.6	0.6	<0.4	<0.4	ND	<0.4	<0.4	<0.4	<0.4	<0.2
Hexane	ug/L	5.0	520	ND	ND	ND	ND	<5.0	ND	ND	ND	ND	ND	ND
F1 (C6 to C10)	ug/L	100	750	<100	<100	<100	<25	<25	ND	<25	<25	<25	<25	<25
F1 (C6 to C10) - minus BTEX	ug/L	100	750	<100	<100	<100	<25	<25	ND	<25	<25	<25	<25	<25
F2 (C10 to C16)	ug/L	100	150	<100	ND	<100	<100	<100	<100	<100	ND	<100	ND	<100
F3 (C16 to C34)	ug/L	100	500	<100	ND	<100	<100	<100	<100	<200	ND	<200	ND	<100
F4 (C34 to C50)	ug/L	100	500	<100	ND	<100	<100	<100	<100	<200	ND	<200	ND	<100
F1 + F2	ug/L	100	-	<100	ND	<100	<100	ND	ND	ND	ND	ND	ND	ND
F3 + F4	ug/L	100	-	<100	ND	<100	<100	ND	ND	ND	ND	ND	ND	ND
Lead	ug/L	<0.5	25	1.0	ND	<0.5	<0.5	0.77	1.0	<0.5	ND	<0.5	ND	ND
Acetone	ug/L	30	130000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	0.3	85000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	0.4	770	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.5	56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/L	0.2	8.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.2	630	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	0.5	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	0.3	82000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,2-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,3-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,4-	ug/L	0.4	67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/L	0.5	4400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloroethane, 1,1-	ug/L	0.4	3100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloroethane, 1,2-	ug/L	0.2	12	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND
Dichloroethylene, 1,1-	ug/L	0.5	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-cis-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-trans-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,2-	ug/L	0.5	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,3-	ug/L	0.2	45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-cis-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-trans-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylene dibromide	ug/L	0.2	0.83	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND
Methyl Ethyl Ketone	ug/L	10	1500000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	ug/L	10	580000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	ug/L	2	1400	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND
Methylene Chloride	ug/L	4	5500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	0.5	9100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,1,2-	ug/L	0.5	28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,2,2-	ug/L	0.5	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethane 1,1,1,-	ug/L	0.4	6700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethane 1,1,2,-	ug/L	0.4	30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluromethane	ug/L	0.5	2500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ug/L	0.2	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

* - Indicates Duplicate Sample
ND - Indicates No Data Available
Exceeds Table 3 Guidelines: Full Depth Generic Site Condition Standards in a Non-Pota
Exceeds Reportable Detection Limit

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Petroleum Hydrocarbons (PHCs)

Parameter	Units	RDL	Borehole/Sample ID	BH-8	BH-8	BH-8	BH-8*	BH-8	BH-8*	BH-8	BH-8	BH-8	BH-9	BH-9*	BH-9	BH-9*	BH-9
			Sample Date	16-Mar-10	31-Oct-11	15-Jun-12	15-Jun-12	17-Jun-14	17-Jun-14	16-Jun-15	21-Apr-16	25-Mar-21	16-Mar-10	16-Mar-10	31-Oct-11	31-Oct-11	25-Mar-21
			Table 3 Standards														
Petroleum Hydrocarbons (PHCs)																	
Benzene	ug/L	0.2	430	140	16	46	ND	48	ND	20	12.2	25.9	<0.2	<0.2	<0.2	<0.2	<0.20
Toluene	ug/L	0.2	18000	10	4.5	3.7	ND	5.5	ND	2.2	107	0.57	0.9	1.0	<0.2	<0.2	<0.20
Ethylbenzene	ug/L	0.2	2300	610	140	610	ND	400	ND	210	252	194	<0.2	<0.2	<0.2	<0.2	<0.10
0-Xylene	ug/L	0.2	-	34	6.4	6.0	ND	11	ND	6.4	12.9	18.7	<0.2	<0.2	<0.2	<0.2	<0.10
p+m-Xylene	ug/L	0.4	-	130	1.7	28	ND	160	ND	62	122	97.0	<0.4	<0.4	<0.4	<0.4	<0.20
Total Xylenes	ug/L	0.4	4200	160	8.1	34	ND	180	ND	68	135	116	<0.4	<0.4	<0.4	<0.4	<0.20
Hexane	ug/L	5.0	520	ND	ND	<10	ND	ND	ND	ND	<5	ND	ND	ND	ND	ND	ND
F1 (C6 to C10)	ug/L	100	750	1800	660	2000	ND	1500	ND	460	950	1490	<100	<100	<25	<25	<25
F1 (C6 to C10) - minus BTEX	ug/L	100	750	910	490	1300	ND	860	ND	160	ND	1150	<100	<100	<25	<25	<25
F2 (C10 to C16)	ug/L	100	150	460	230	820	740	520	490	480	180	250	<100	ND	<100	ND	<100
F3 (C16 to C34)	ug/L	100	500	<100	<100	<100	<100	<200	<200	<200	1080	140	<100	ND	<100	ND	<100
F4 (C34 to C50)	ug/L	100	500	110	<100	<100	<100	<200	<200	<200	3190	<100	<100	ND	<100	ND	<100
F1 + F2	ug/L	100	-	1400	720	ND	ND	ND	ND	-	ND	ND	<100	ND	<100	ND	ND
F3 + F4	ug/L	100	-	110	<100	ND	ND	ND	ND	-	ND	ND	<100	ND	<100	ND	ND
Lead	ug/L	<0.5	25	<0.5	<0.5	<0.5	ND	ND	ND	<0.5	ND	ND	<0.5	ND	<0.5	<0.5	ND
Acetone	ug/L	30	130000	ND	ND	ND	ND	ND	ND	ND	60	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	0.3	85000	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	0.4	770	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.5	56	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/L	0.2	8.4	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.2	630	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	0.5	22	ND	ND	ND	ND	ND	ND	ND	0.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	0.3	82000	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,2-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,3-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,4-	ug/L	0.4	67	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/L	0.5	4400	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND
Dichloroethane, 1,1-	ug/L	0.4	3100	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Dichloroethane, 1,2-	ug/L	0.2	12	ND	ND	ND	ND	<0.2	ND	ND	<0.2	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,1-	ug/L	0.5	17	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-cis-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-trans-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,2-	ug/L	0.5	140	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,3-	ug/L	0.2	45	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-cis-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-trans-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND
Ethylene dibromide	ug/L	0.2	0.83	ND	ND	ND	ND	<10	ND	ND	<0.2	ND	ND	ND	ND	ND	ND
Methyl Ethyl Ketone	ug/L	10	1500000	ND	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	ug/L	10	580000	ND	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	ug/L	2	1400	ND	ND	ND	ND	<10	ND	ND	<2	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/L	4	5500	ND	ND	ND	ND	ND	ND	ND	<4	ND	ND	ND	ND	ND	ND
Styrene	ug/L	0.5	9100	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,1,2-	ug/L	0.5	28	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,2,2-	ug/L	0.5	15	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND
Trichloroethane 1,1,1,-	ug/L	0.4	6700	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Trichloroethane 1,1,2,-	ug/L	0.4	30	ND	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND	ND
Trichloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND	ND
Trichlorofluromethane	ug/L	0.5	2500	ND	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ug/L	0.2	1.7	ND	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND	ND

* - Indicates Duplicate Sample
ND - Indicates No Data Available
Exceeds Table 3 Guidelines: Full Depth Generic Site Condition Standards in a Non-Pota
Exceeds Reportable Detection Limit

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Petroleum Hydrocarbons (PHCs)

Parameter	Units	RDL	Borehole/Sample ID	BH-11	BH-11*	BH-11	BH-11	BH-11*	BH-11	BH-11	BH-11*	BH-11	BH-11
			Sample Date	16-Mar-10	16-Mar-10	31-Oct-11	13-Jun-12	13-Jun-12	17-Jun-14	10-Jun-15	10-Jun-15	21-Apr-16	25-Mar-21
			Table 3 Standards										
Petroleum Hydrocarbons (PHCs)													
Benzene	ug/L	0.2	430	0.7	ND	7.9	64	62	110	11	10	14.5	5.89
Toluene	ug/L	0.2	18000	14	ND	10	4.2	4.1	270	100	98	525	0.44
Ethylbenzene	ug/L	0.2	2300	20	ND	27	87	84	570	470	440	928	53.2
0-Xylene	ug/L	0.2	-	32	ND	50	19	18	680	630	590	1200	26.5
p+m-Xylene	ug/L	0.4	-	170	ND	130	28	28	1500	1600	1400	3540	22.4
Total Xylenes	ug/L	0.4	4200	200	ND	180	47	46	2200	2200	2000	<0.5	48.9
Hexane	ug/L	5.0	520	ND	ND	ND	<5.0	<5.0	ND	ND	ND	<5	ND
F1 (C6 to C10)	ug/L	100	750	1100	ND	830	490	500	7600	6400	6600	17500	960
F1 (C6 to C10) - minus BTEX	ug/L	100	750	850	ND	610	290	300	4500	3600	4000	ND	852
F2 (C10 to C16)	ug/L	100	150	460	440	240	120	ND	2400	2200	2100	3230	1700
F3 (C16 to C34)	ug/L	100	500	<100	<100	<100	<100	ND	<200	<200	<200	<50	290
F4 (C34 to C50)	ug/L	100	500	<100	<100	<100	<100	ND	<200	<200	<200	<50	<100
F1 + F2	ug/L	100	-	1300	ND	850	ND	ND	ND	ND	ND	ND	ND
F3 + F4	ug/L	100	-	<100	<100	<100	ND	ND	ND	ND	ND	ND	ND
Lead	ug/L	<0.5	25	ND	<0.5	ND	0.62	ND	ND	3.4	3.6	ND	ND
Acetone	ug/L	30	130000	ND	ND	ND	ND	ND	ND	ND	ND	<30	ND
Bromodichloromethane	ug/L	0.3	85000	ND	ND	ND	ND	ND	ND	ND	ND	<0.3	ND
Bromoform	ug/L	0.4	770	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Bromomethane	ug/L	0.5	56	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Carbon Tetrachloride	ug/L	0.2	8.4	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND
Chlorobenzene	ug/L	0.2	630	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND
Chloroform	ug/L	0.5	22	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Dibromochloromethane	ug/L	0.3	82000	ND	ND	ND	ND	ND	ND	ND	ND	<0.3	ND
Dichlorobenzene, 1,2-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Dichlorobenzene, 1,3-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Dichlorobenzene, 1,4-	ug/L	0.4	67	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Dichlorodifluoromethane	ug/L	0.5	4400	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Dichloroethane, 1,1-	ug/L	0.4	3100	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Dichloroethane, 1,2-	ug/L	0.2	12	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND
Dichloroethylene, 1,1-	ug/L	0.5	17	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Dichloroethylene, 1,2-cis-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Dichloroethylene, 1,2-trans-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Dichloropropane, 1,2-	ug/L	0.5	140	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Dichloropropane, 1,3-	ug/L	0.2	45	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND
Dichloropropylene, 1,3-cis-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND
Dichloropropylene, 1,3-trans-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND
Ethylene dibromide	ug/L	0.2	0.83	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND
Methyl Ethyl Ketone	ug/L	10	1500000	ND	ND	ND	ND	ND	ND	ND	ND	<10	ND
Methyl Isobutyl Ketone	ug/L	10	580000	ND	ND	ND	ND	ND	ND	ND	ND	<10	ND
Methyl tert-Butyl Ether (MTBE)	ug/L	2	1400	ND	ND	ND	ND	ND	ND	ND	ND	<2	ND
Methylene Chloride	ug/L	4	5500	ND	ND	ND	ND	ND	ND	ND	ND	<4	ND
Styrene	ug/L	0.5	9100	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Tetrachloroethane, 1,1,1,2-	ug/L	0.5	28	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Tetrachloroethane, 1,1,2,2-	ug/L	0.5	15	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Tetrachloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	ND	<0.3	ND
Trichloroethane 1,1,1,-	ug/L	0.4	6700	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Trichloroethane 1,1,2,-	ug/L	0.4	30	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	ND
Trichloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	ND	ND	<0.3	ND
Trichlorofluromethane	ug/L	0.5	2500	ND	ND	ND	ND	ND	ND	ND	ND	<0.5	ND
Vinyl Chloride	ug/L	0.2	1.7	ND	ND	ND	ND	ND	ND	ND	ND	<0.2	ND

* - Indicates Duplicate Sample
ND - Indicates No Data Available
Exceeds Table 3 Guidelines: Full Depth Generic Site Condition Standards in a Non-Pota
Exceeds Reportable Detection Limit

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Petroleum Hydrocarbons (PHCs)

Parameter	Units	RDL	Borehole/Sample ID	BH-13	BH-13	BH-13	BH-13*	BH-13	BH-13*	BH-13	BH-13	BH-14	BH-14	BH-14	BH-14
			Sample Date	31-Oct-11	13-Jun-12	18-Jun-14	18-Jun-14	10-Jun-15	10-Jun-15	21-Apr-16	25-Mar-21	31-Oct-11	18-Jun-14	10-Jun-15	25-Mar-21
			Table 3 Standards												
Petroleum Hydrocarbons (PHCs)															
Benzene	ug/L	0.2	430	4.1	9.3	36	65	17	16	31.0	2.0	3.7	12	7.3	<0.20
Toluene	ug/L	0.2	18000	52	69	55	51	29	26	76.2	0.75	0.31	<0.2	<0.2	<0.20
Ethylbenzene	ug/L	0.2	2300	340	750	1000	1000	720	640	1290	109	75	19	45	0.14
0-Xylene	ug/L	0.2	-	110	160	140	140	100	94	166	6.28	0.25	<0.2	<0.2	<0.10
p+m-Xylene	ug/L	0.4	-	620	960	990	960	670	600	1080	7.22	<0.4	<0.4	<0.4	<0.20
Total Xylenes	ug/L	0.4	4200	730	1100	1100	1100	780	700	1250	13.5	<0.4	<0.4	<0.4	<0.20
Hexane	ug/L	5.0	520	ND	17	ND	ND	ND	ND	21	ND	ND	ND	ND	ND
F1 (C6 to C10)	ug/L	100	750	2100	4500	4400	4000	3300	3500	6340	410	190	31	130	32
F1 (C6 to C10) - minus BTEX	ug/L	100	750	930	2600	2100	1800	1800	2100	ND	285	110	<25	74	32
F2 (C10 to C16)	ug/L	100	150	270	540	1000	ND	960	ND	770	<100	<100	<100	<100	<100
F3 (C16 to C34)	ug/L	100	500	<100	<100	<200	ND	<200	ND	160	<100	<100	<200	<200	<100
F4 (C34 to C50)	ug/L	100	500	<100	<100	<200	ND	<200	ND	590	<100	<100	<200	<200	<100
F1 + F2	ug/L	100	-	1200	ND	ND	ND	ND	ND	ND	ND	110	ND	ND	ND
F3 + F4	ug/L	100	-	<100	ND	ND	ND	ND	ND	ND	ND	<100	ND	ND	ND
Lead	ug/L	<0.5	25	<0.5	0.57	<0.5	ND	<0.5	<0.5	ND	ND	<0.5	<2.5	<0.5	ND
Acetone	ug/L	30	130000	ND	ND	ND	ND	ND	ND	<30	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	0.3	85000	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND
Bromoform	ug/L	0.4	770	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.5	56	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/L	0.2	8.4	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.2	630	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND
Chloroform	ug/L	0.5	22	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	0.3	82000	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND
Dichlorobenzene, 1,2-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Dichlorobenzene, 1,3-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Dichlorobenzene, 1,4-	ug/L	0.4	67	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/L	0.5	4400	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Dichloroethane, 1,1-	ug/L	0.4	3100	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Dichloroethane, 1,2-	ug/L	0.2	12	ND	ND	<40	ND	ND	ND	<0.2	ND	ND	<0.4	ND	ND
Dichloroethylene, 1,1-	ug/L	0.5	17	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-cis-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Dichloroethylene, 1,2-trans-	ug/L	0.4	17	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Dichloropropane, 1,2-	ug/L	0.5	140	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Dichloropropane, 1,3-	ug/L	0.2	45	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-cis-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-trans-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND
Ethylene dibromide	ug/L	0.2	0.83	ND	ND	<40	ND	ND	ND	<0.2	ND	ND	<0.4	ND	ND
Methyl Ethyl Ketone	ug/L	10	1500000	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	ug/L	10	580000	ND	ND	ND	ND	ND	ND	<10	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	ug/L	2	1400	ND	ND	<40	ND	ND	ND	<2	ND	ND	1.9	ND	ND
Methylene Chloride	ug/L	4	5500	ND	ND	ND	ND	ND	ND	<4	ND	ND	ND	ND	ND
Styrene	ug/L	0.5	9100	ND	ND	ND	ND	ND	ND	10.5	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,1,2-	ug/L	0.5	28	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,2,2-	ug/L	0.5	15	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND
Trichloroethane 1,1,1,-	ug/L	0.4	6700	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Trichloroethane 1,1,2,-	ug/L	0.4	30	ND	ND	ND	ND	ND	ND	<0.4	ND	ND	ND	ND	ND
Trichloroethylene	ug/L	0.3	17	ND	ND	ND	ND	ND	ND	<0.3	ND	ND	ND	ND	ND
Trichlorofluromethane	ug/L	0.5	2500	ND	ND	ND	ND	ND	ND	<0.5	ND	ND	ND	ND	ND
Vinyl Chloride	ug/L	0.2	1.7	ND	ND	ND	ND	ND	ND	<0.2	ND	ND	ND	ND	ND

* - Indicates Duplicate Sample
ND - Indicates No Data Available
Exceeds Table 3 Guidelines: Full Depth Generic Site Condition Standards in a Non-Pota
Exceeds Reportable Detection Limit

Groundwater Sampling Program
Circle K - 1545 Woodroffe Avenue, Ottawa, Ontario
Table 1: Petroleum Hydrocarbons (PHCs)

Parameter	Units	RDL	Borehole/Sample ID	BH-15	BH-15	BH-15*	BH-15	BH-15*	BH-15
			Sample Date	31-Oct-11	18-Jun-14	18-Jun-14	15-Jun-15	15-Jun-15	25-Mar-21
			Table 3 Standards						
Petroleum Hydrocarbons (PHCs)									
Benzene	ug/L	0.2	430	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20
Toluene	ug/L	0.2	18000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20
Ethylbenzene	ug/L	0.2	2300	<0.2	<0.2	<0.2	<0.2	<0.2	<0.10
0-Xylene	ug/L	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.10
p+m-Xylene	ug/L	0.4	-	<0.4	<0.4	<0.4	<0.4	<0.4	<0.20
Total Xylenes	ug/L	0.4	4200	<0.4	<0.4	<0.4	<0.4	<0.4	<0.20
Hexane	ug/L	5.0	520	ND	ND	ND	ND	ND	ND
F1 (C6 to C10)	ug/L	100	750	<25	<25	<25	<25	<25	<25
F1 (C6 to C10) - minus BTEX	ug/L	100	750	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	ug/L	100	150	<100	<100	ND	<100	ND	<100
F3 (C16 to C34)	ug/L	100	500	<100	<200	ND	<200	ND	<100
F4 (C34 to C50)	ug/L	100	500	<100	<200	ND	<200	ND	<100
F1 + F2	ug/L	100	-	<100	ND	ND	ND	ND	ND
F3 + F4	ug/L	100	-	<100	ND	ND	ND	ND	ND
Lead	ug/L	<0.5	25	<0.5	ND	ND	<0.5	ND	ND
Acetone	ug/L	30	130000	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	0.3	85000	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	0.4	770	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	0.5	56	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/L	0.2	8.4	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	0.2	630	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	0.5	22	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	0.3	82000	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,2-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,3-	ug/L	0.4	9600	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,4-	ug/L	0.4	67	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/L	0.5	4400	ND	<0.5	ND	ND	ND	ND
Dichloroethane, 1,1-	ug/L	0.4	3100	ND	<0.1	ND	ND	ND	ND
Dichloroethane, 1,2-	ug/L	0.2	12	ND	<0.2	ND	ND	ND	ND
Dichloroethylene, 1,1-	ug/L	0.5	17	ND	<0.1	ND	ND	ND	ND
Dichloroethylene, 1,2-cis-	ug/L	0.4	17	ND	<0.1	ND	ND	ND	ND
Dichloroethylene, 1,2-trans-	ug/L	0.4	17	ND	<0.1	ND	ND	ND	ND
Dichloropropane, 1,2-	ug/L	0.5	140	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,3-	ug/L	0.2	45	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-cis-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND
Dichloropropylene, 1,3-trans-	ug/L	0.2	-	ND	ND	ND	ND	ND	ND
Ethylene dibromide	ug/L	0.2	0.83	ND	<0.2	ND	ND	ND	ND
Methyl Ethyl Ketone	ug/L	10	1500000	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	ug/L	10	580000	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	ug/L	2	1400	ND	<0.2	ND	ND	ND	ND
Methylene Chloride	ug/L	4	5500	ND	ND	ND	ND	ND	ND
Styrene	ug/L	0.5	9100	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,1,2-	ug/L	0.5	28	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,2,2-	ug/L	0.5	15	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ug/L	0.3	17	ND	<0.1	ND	ND	ND	ND
Trichloroethane 1,1,1,-	ug/L	0.4	6700	ND	<0.1	ND	ND	ND	ND
Trichloroethane 1,1,2,-	ug/L	0.4	30	ND	<0.2	ND	ND	ND	ND
Trichloroethylene	ug/L	0.3	17	ND	<0.1	ND	ND	ND	ND
Trichlorofluromethane	ug/L	0.5	2500	ND	<0.2	ND	ND	ND	ND
Vinyl Chloride	ug/L	0.2	1.7	ND	ND	ND	ND	ND	ND

* - Indicates Duplicate Sample
ND - Indicates No Data Available
Exceeds Table 3 Guidelines: Full Depth Generic Site Condition Standards in a Non-Pota
Exceeds Reportable Detection Limit

Project No. 151-10565-220.31

June 15, 2016

Couche Tard Inc.
4204, boul. Industrial
Laval, Quebec H7L 0E3

Client Email: daniel.duchaine@couche-tard.com

Attention: Mr. Daniel Duchaine

Re: Groundwater Monitoring and Sampling Report
IOL Site No. 302287
1545 Woodroffe Avenue, Ottawa, Ontario

WSP Canada Inc. (WSP) has completed a limited groundwater monitoring and sampling program at the Site located at 1545 Woodroffe Avenue, Ottawa, Ontario (hereinafter referred to as the "Site") and is pleased to provide herein our findings and conclusions.

1. BACKGROUND

WSP was retained by Couche Tard Inc. to conduct a limited investigation at the Site as part of a pre-purchase review. The Site is an active gas station located at 1545 Woodroffe Avenue, Ottawa, Ontario. The Site location and selected assessment locations are presented on **Drawing 1**. The objective of the subsurface investigation was to assess the existing groundwater quality and the presence/absence of potential contaminants of concern (PCOCs) in groundwater at the Site.

2. SCOPE OF WORK

Groundwater sampling up to a total of eight selected monitoring wells with two located off-site (in municipal rights-of-way) and six on-site to assess the current quality of groundwater and verify the presence or absence of free product. The assessment of the selected monitoring locations included: measuring and recording subsurface vapour concentrations, groundwater levels, and the apparent thickness of free product or light non-aqueous phase liquid (LNAPL), if present.

This proposed scope of work utilized data presented in the following reports:

- *"Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario. Location No.: 88001626."* Report by Parsons Canada Ltd. (Parsons), April 2015; and,
- *"Subsurface Investigation, Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario."* Report by Parsons, October 2012.
- *"Contaminant Management Plan, 1545 Woodroffe Avenue, Ottawa, Ontario". Report by Parsons, February 2013.*
- *"2015 Groundwater Monitoring and Sampling Data Package", Report by Parsons, August 2015.*

WSP Canada Inc.
51 Constellation Court
Toronto, ON M9W 1K4

Phone: +1 416 798-0065
Fax: +1 416 798-0518
www.wspgroup.com

3. SELECTED SITE CONDITION STANDARDS

Based upon a review and assessment of the two reports (listed above) prepared by Parsons, the groundwater analytical results have been compared to the Full Depth Generic Site Condition Standards (SCSs) in a non-potable groundwater condition as contained in Table 3 of the Ministry of the Environment (MOE) publication "Soil, Ground Water and Sediment Standards for Use Under Ontario Regulation 153/04, Part XV.1 of the Environmental Protection Act", published on April 15, 2011. Hereafter referred to as 2011 MOE Table 3 SCSs. This evaluation standard for the Site was selected for comparison purposes based on the following:

- The site is not located within 30 m of a body of water;
- The Site is not considered an "environmentally sensitive" site, as defined by O. Reg. 153/04.; and,
- The pH values of surface and subsurface soil samples are anticipated to be between 5 and 9 or between 5 and 11, respectively.

4. SUBSURFACE INVESTIGATION

The sampling methods used to complete the groundwater monitoring and sampling were in general accordance with Ontario Regulation (O.Reg.) 153/04 as amended. A total of eight existing monitoring well locations were proposed to be monitored. Two locations were off-site in municipal rights-of-way (BH101 and BH102) and six were located on- site (BH5, BH8, BH-10, BH11, BH12, and BH-13). The monitoring well screen details are presented in **Table 1**.

4.1. GROUNDWATER MONITORING AND SAMPLING

Headspace vapour readings were measured using a RKI Eagle II (RKI) immediately upon the removal of the monitoring well cap. The RKI measures combustible vapours concentrations greater than 1 part per million by volume (ppmV). The RKI unit was calibrated according to the manufacturer procedures prior to use in the field.

Groundwater level and apparent free product or LNAPL thickness measurements were recorded relative to the top of the casing using an electronic interface probe. The survey data provided in the on-site and off-site reports by Parsons referenced previously were used to calculate groundwater elevations. If there was a measurable thickness of free product detected on the groundwater surface, the actual groundwater elevation was corrected by assuming a specific gravity for the free product of 0.75 g/cm3.

Prior to sampling, each well was purged of three well volumes or purged dry and allowed to recover sufficiently to obtain fresh formation groundwater samples. The purged water was placed into 205 L drums for off-site disposal.

A Hanna HI98121 Multi-meter (temperature, pH and oxidation reduction potential (ORP)) meter, HACH 2100Q meter (turbidity) and EC Testr11+ Multi-range meter (electrical conductivity (EC)). These meters were used to record temperature, pH, ORP, turbidity and EC of the groundwater prior to sample collection.

Dedicated Waterra® bailers were used to collect groundwater samples. The samples were collected and placed into laboratory-supplied bottles and stored according to chain of custody procedures until received at the laboratory. All groundwater samples were collected and handled in accordance with generally accepted sampling and handling procedures used by the environmental consulting industry. All sample containers, preservative, and labels were supplied by the laboratory providing sample analysis. New disposable gloves were used to handle sampling equipment and samples for each individual sampling location.

4.2. LABORATORY

All groundwater samples were placed in laboratory-supplied jars and bottles, stored in coolers with ice, and transported to Exova in Ottawa, Ontario for analytical analysis. **Table 2** presents a summary of groundwater samples submitted for analysis.

4.3. QUALITY ASSURANCE/QUALITY CONTROL

As part of the quality assurance/quality control (QA/QC) program for the project, one field-prepared duplicate sample per ten samples of each media type were collected and submitted for the same chemical analyses as the original samples with each laboratory submission. A trip blank groundwater sample was also submitted for analysis of VOCs.

The RPD was calculated in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act as amended July 1, 2011 (i.e., 2011 Protocol). The calculated RPD was assessed against the recommended performance criteria outlined in the 2011 Protocol where the measured concentration was greater than 5 times the method detection limit (MDL).

5. FINDINGS

5.1. GROUNDWATER

The groundwater monitoring results are presented in **Table 1**. As indicated, only 6 of the 8 selected monitoring wells were accessible (BH10 was filled with sand and an asphalt patch has been placed over BH102). In addition, BH101 was found to be damaged (top broken). While the groundwater level and vapour readings were measured, no groundwater sampling was undertaken in this well as the integrity of the well has been compromised. Photos of these three monitors are presented in **Appendix A**.

As indicated in **Table 1** subsurface combustible vapours were detected at five locations. The maximum subsurface reading of 11,100 ppmV was recorded at BH12. All groundwater levels were measured below the top of the well screens, except at BH101. On April 21, 2016 there were no detectable thickness free product/LNAPL in any of the accessible monitoring wells, except at the following two locations:

- → BH12 (50 mm thickness)
- → BH5 (sheen observed on purge water).

The groundwater levels on April 21, 2016 are presented in **Table 1** and the levels ranged from a minimum of 1.22 metres below ground surface (mbgs) at BH101 to a maximum of 4.88 mbgs at BH8. The calculated groundwater elevation contours that are presented on **Drawing 2** indicate a northwest groundwater flow direction. However, this is not consistent with historical south to southwest groundwater flow direction reported by Parsons when data was collected from the complete network of existing monitoring wells.

5.2. ANALYTICAL RESULTS

The groundwater analytical results for PHCs and VOCs are presented in **Table 3** and none of the groundwater analytical results met the 2011 MOE Table 3 SCSs. As indicated on **Drawing 3**, one or more of the following PHC and VOC parameters exceeded the 2011 MOE Table 3 SCSs at each of the selected assessment locations:

- benzene, ethylbenzene and xylenes;
- PHCs in the F1 to F4 ranges; and,
- 1,1,1,2-tetrachloroethane and 1,1,2,2-tetrachloroethane

The certificates of analyses are provided in **Appendix B**. It was noted that the laboratory method detection limits for some parameters analysed on the groundwater collected from BH12, are higher than the

respective 2011 MOE Table 3 SCSs criteria, due to sample dilution required by the laboratory due the high concentrations of the PCOCs.

For comparison purposes, the results of the current PHC and BTEX analysis and the presence of sheen or free product have been compared to the most recent historical site monitoring data (from 2015) as outlined in Table 4. The results indicate the following:

- The groundwater samples were generally found to contain higher PHC concentrations than reported in 2015 at all five tested locations
- Borehole BH12 was noted to have 50mm of product during the current assessment while not reported to contain sheen or free product in 2015.
- Borehole BH5 was noted to have a sheen on the groundwater during the current assessment while not previously reported to have a sheen or free product in 2015.

5.3. QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

A trip blank (distilled water sample), prepared by the laboratory, travelled along with the groundwater samples and were analyzed by the laboratory for VOCs. All concentrations were below the reported detection limit (RDL), indicating no contamination from the sample containers, preservatives, and transportation and storage conditions. The results also indicate that the laboratory instrument was not detecting false interference.

The RPDs for the analyzed parameters in duplicate samples (where the RPD could be calculated) were within the 2011 Protocol performance criteria. As such, it is WSP's opinion that the laboratory analytical data is reliable and reproducible.

6. CONCLUSIONS AND RECOMENDATIONS

WSP has completed a limited groundwater sampling program at 1545 Woodroffe Avenue, Ottawa, Ontario. Groundwater samples were collected and submitted for laboratory analysis. The purpose of this work was to assess the potential environmental liability as part of a pre-purchase review.

Based upon this limited sampling program, WSP presents the following findings:

- The subsurface conditions were monitored on April 21, 2016:
  - Subsurface combustible vapours were detected at five locations. The maximum subsurface reading of 11,100 ppmV was recorded at BH12.
  - Free product was encountered at two locations: BH12 (50 mm thickness) and BH5 (<1 mm, sheen observed on purge water).
  - Groundwater levels ranged from a minimum of 1.22 mbgs at BH101 to a maximum of 4.88 mbgs at BH8.
  - The horizontal groundwater flow direction was inferred to be in a northwest direction. However, this is not consistent with historical south to southwest groundwater flow direction reported by Parsons when data was collected from the complete network of existing monitoring wells.
- On April 21, 2016, groundwater samples were collected from five on-site monitoring wells (BH5, BH8, BH11, BH12, and BH13) with exceedances of 2011 MOE Table 3 SCSs at all five locations for one or more of the following petroleum hydrocarbon and chlorinated solvent parameters:
  - benzene, ethylbenzene and xylenes;
  - PHCs F1 to F4; and,
  - 1,1,1,2-tetrachloroethane and 1,1,2,2-tetrachloroethane.
- One on-site groundwater monitor (BH10) and two off-site groundwater monitors (BH101 and BH102) situated in Medhurst Drive south of the site were no longer accessible or suitable for sampling and no groundwater quality data was collected from these locations. It is noted, however, that BH101 was previously identified as impacted.

Based upon this limited site investigation, WSP presents the following conclusions:

- The subsurface vapour concentrations at three monitoring well locations (i.e., exceeding 1,000 ppmV) indicates that there is the potential for vapour intrusion into the on-site buildings/structures.
- There are PHC and VOC impacts in the groundwater at this Site extending to a depth of at least 6.1 mbgs but they have not been delineated. Additional assessment would be required to more fully delineate the vertical extent of the PHC impacts in groundwater and both the horizontal and vertical VOC groundwater impacts.
- Free product and/or sheen has been identified at two (2) monitoring well locations on site. It is noted that borehole BH12 was most recently monitored in 2012 and was noted to contain a sheen. Monitoring carried out as part of the current assessment indicated the presence of 50mm of free product in this groundwater monitor. Borehole BH5 was not previously noted to contain any free product or sheen but was found to contain a sheen during this current assessment.
- Comparison of the current analytical results of retrieved groundwater samples to previous monitoring data from 2015 generally indicates higher concentrations of many hydrocarbon parameters in the monitors tested.
- The PHC and VOC impacted groundwater has the potential to migrate off-site.
- On-going contaminant management reporting will be required for this site.

7. STATEMENT OF LIMITATIONS

This report was prepared for the account of Couche Tard Inc. The material in this report reflects WSP's judgment in light of the information available to it at the time of preparation. Any use, which a Third Party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. WSP Canada Ltd. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

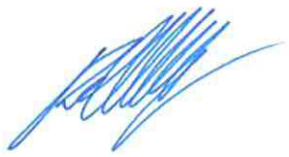
Thank you for the opportunity to be of service on this project. Should you have any questions or wish to review the contents of this letter in more detail, please do not hesitate to contact the undersigned.

Yours Very Truly,
WSP Canada Inc.

Prepared by:

Trevor Balsdon, E.I.T.
Engineering Intern

Reviewed by:



Rodney Obdeyn, P.Eng.
Senior Environmental Engineer

Tables:

Table 1: Monitoring Well Data

Table 2: Summary of Groundwater Samples Submitted for Chemical Analysis

Table 3: Groundwater Analytical Results – PHCs and VOCs

Table 4: Summary of Current Monitoring Results versus 2012 Monitoring Results

Drawings:

Drawing 1: Assessment Location Plan

Drawing 2: Selected Groundwater Elevations and Inferred Groundwater Flow Direction – April 21, 2016

Drawing 3: Groundwater Analytical Results- Exceedances (Plan View)

Appendices:

Appendix A – Monitoring Well Photos (groundwater not assessed)

Appendix B – Laboratory Certificates of Analyses

TABLES

TABLE 1: Monitoring Well Data
Limited Groundwater Monitoring and Sampling
1545 Woodroffe Avenue, Ottawa
Project No. 151-10565-00

Monitoring Well	Ground Surface Elevation (m)	Relative Top of Casing Elevation (m)	Top of Well Screen (mbgs)	Bottom of Well Screen (mbgs)	Monitoring Date	Depth to Free Product (m)	Depth to Water (m)	Groundwater Elevation (m)	Free Product Thickness (mm)	Subsurface Vapours - PID (ppmV)	Subsurface Vapours - CGD (ppmV)	GWL above well screen
On-Site												
BH5	88.92	88.79	1.80	4.60	21-Apr-16	ND	2.90	85.89	Sheen	300	250	No
BH8	89.00	88.88	4.50	6.00	21-Apr-16	ND	4.88	84.00	ND	400	520	No
BH10	88.56	88.46	3.70	6.10	21-Apr-16	ND	NA	NA	NA	NA	NA	NA
BH11	88.57	88.53	3.10	6.10	21-Apr-16	ND	4.35	84.18	ND	2,000	3,800	No
BH12	88.82	88.74	3.00	6.00	21-Apr-16	4.73	4.78	84.00	50	1,777	11,100	No
BH-13	88.49	88.42	3.70	6.10	21-Apr-16	ND	4.38	84.04	ND	4,450	2,900	No
Off-Site												
BH101	88.27	88.18	4.00	6.10	21-Apr-16	ND	1.22	86.96	ND	ND	ND	Yes
BH102	88.22	88.08	3.50	5.50	21-Apr-16	NA	NA	NA	NA	NA	NA	NA

NOTES:

1) Elevations and screened intervals obtained from Parson's on-Site report dated April 9, 2015 and off-site report dated October 11, 201
2) ppmV: Parts Per Million by Volume
3) Calculated using product thickness corrected by a specific gravity of 0.75 g/cm3
4) PID: Photoionization Detector
5) CGD: Combustible gas detector
6) GWL: Groundwater Level
7) ND: Not detected
8) NA: Not accessible

TABLE 2: Summary of Groundwater Samples Submitted for Chemical Analysis
Limited Groundwater Monitoring and Sampling
1545 Woodroffe Avenue, Ottawa
Project No. 151-10565-00

Borehole/ Sample ID	Date	Well Screened Interval (mbgs)			Chemical Analyses		Rationale
					PHCs	VOCs	
On-Site							
BH5	21-Apr-16	1.8	-	4.6	✓	✓	Selected location
BH8	21-Apr-16	4.5	-	6.0	✓	✓	Selected location
BH-10	21-Apr-16	3.7	-	6.1	-	-	No samples were taken; monitoring well was filled with sand
BH11	21-Apr-16	3.1	-	6.1	✓	✓	Selected location
BH12	21-Apr-16	3.0	-	6.0	✓	✓	Selected location
BH-13	21-Apr-16	3.7	-	6.1	✓	✓	Selected location
Off-Site							
BH101	21-Apr-16	4.0	-	6.1	-	-	No samples were taken due to potential for unreliable results; monitoring well has no cap
BH102	21-Apr-16	3.5	-	5.5	-	-	No samples were taken; monitoring well buried in asphalt

NOTES:

1) Screened intervals obtained from previous reports
2) PHCs: Petroleum Hydrocarbons
3) VOCs: Volatile Organic Compounds

TABLE 3: Summary of PHCs and VOCs in Groundwater
Phase Two Environmental Site Assessment
1545 Woodroffe Avenue, Ottawa
Project No. 151-10565-00

Parameter	Units	LDL	Borehole / Sample ID	BH5	BH8	BH11	BH12	BH-13	BH 1013 (duplicate of BH13)	Trip Blank
			Date of Collection	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16	21-Apr-16
			Analytical Report Reference No.	1236175	1236176	1236180	1236177	1236178	1236179	1236181
			2011 MOE Table	Screened: 1.8 - 4.6 mbgs	Screened: 4.5 - 6.0 mbgs	Screened: 3.1 - 6.1 mbgs	Screened: 3.0 - 6.0 mbgs	Screened: 3.7 - 6.1 mbgs	Screened: 3.7 - 6.1 mbgs	NA
PETROLIUM HYDROCARBONS (PHCs)										
F1 (C6 to C10)	ug/L	20	750	14800	950	17500	71400	6340	6290	NA
F2 (C10 to C16)	ug/L	20	150	14800	180	3230	1940000	770	800	NA
F3 (C16 to C34)	ug/L	50	500	3820	1080	<50	1020000	160	170	NA
F4 (C34 to C50)	ug/L	50	500	3680	3190	<50	<50	590	560	NA
VOLATILE ORGANIC COMPOUNDS (VOCs)										
Acetone	ug/L	30	130000	<30	60	<30	<3000	<30	<30	<30
Benzene	ug/L	0.5	44	89.6	12.2	14.5	2680	31.0	33.1	<0.5
Bromodichloromethane	ug/L	0.3	85000	<0.3	<0.3	<0.3	<30	<0.3	<0.3	<0.3
Bromoform	ug/L	0.4	380	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Bromomethane	ug/L	0.5	5.6	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	0.2	0.79	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Chlorobenzene	ug/L	0.2	630	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Chloroform	ug/L	0.5	2.4	<0.5	0.6	<0.5	<50	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	0.3	82000	<0.3	<0.3	<0.3	<30	<0.3	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/L	0.4	4600	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/L	0.4	9600	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/L	0.4	8	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Dichlorodifluoromethane	ug/L	0.5	4400	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5
Dichloroethane, 1,1-	ug/L	0.4	320	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Dichloroethane, 1,2-	ug/L	0.2	1.6	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Dichloroethylene, 1,1-	ug/L	0.5	1.6	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5
Dichloroethylene, cis-1,2-	ug/L	0.4	1.6	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Dichloroethylene, trans-1,2-	ug/L	0.4	1.6	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Dichloropropane, 1,2-	ug/L	0.5	16	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5
Dichloropropene, 1,3-	ug/L	0.2	5.2	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Dichloropropylene, 1,3-cis-	ug/L	0.2	1.6	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Dichloropropylene, 1,3-trans-	ug/L	0.2	1.6	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Ethylbenzene	ug/L	0.5	2300	894	252	928	2970	1290	1270	<0.5
Ethylene Dibromide	ug/L	0.2	0.25	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Hexane (n)	ug/L	5	51	14	<5	<5	<500	21	23	<5
Methyl Ethyl Ketone	ug/L	10	470000	<10	<10	<10	<1000	<10	<10	<10
Methyl Isobutyl Ketone	ug/L	10	140000	<10	<10	<10	5000	<10	<10	<10
Methyl tert-Butyl Ether (MTBE)	ug/L	2	190	<2	<2	<2	<200	<2	<2	<2
Methylene Chloride	ug/L	4	610	<4.0	<4.0	<4.0	<400	<4.0	<4.0	<4.0
Styrene	ug/L	0.5	1300	<0.5	<0.5	<0.5	270	10.5	10.9	<0.5
Tetrachloroethane, 1,1,1,2-	ug/L	0.5	3.3	31	5.9	<0.5	<50	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/L	0.5	3.2	0.8	<0.5	<0.5	250	<0.5	<0.5	<0.5
Tetrachloroethylene	ug/L	0.3	1.6	<0.3	<0.3	<0.3	<30	<0.3	<0.3	<0.3
Toluene	ug/L	0.5	18000	5.1	1.0	525	8920	76.2	62.5	<0.5
Trichloroethane, 1,1,1-	ug/L	0.4	640	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/L	0.4	4.7	<0.4	<0.4	<0.4	<40	<0.4	<0.4	<0.4
Trichloroethylene	ug/L	0.3	1.6	<0.3	<0.3	<0.3	<30	<0.3	<0.3	<0.3
Trichlorofluoromethane	ug/L	0.5	2500	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5
Vinyl Chloride	ug/L	0.2	0.5	<0.2	<0.2	<0.2	<20	<0.2	<0.2	<0.2
Xylene Mixture	ug/L	0.5	4200	3520	135	4740	16900	1250	1240	<0.5
Xylene, m/p-	ug/L	0.4	NV	3390	122	3540	11600	1080	1080	<0.4
Xylene, o-	ug/L	0.4	NV	135	12.9	1200	5280	166	160	<0.4

NOTES:

1. MOE Table 3 = Full Depth Generic Site Condition Standards in a Non-Potable Ground Water as contained in Table 3 of the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", published by the MOE on April 15, 2011
2. LDL = Lowest Detection Limit
3. N/A = Not applicable
4. Pink highlighting indicates result above MOE Table 3 Standard
5. Yellow highlighting indicates detection limit higher than MOE Table 3 Standard

TABLE 4: Summary of Current Monitoring Results versus 2012 Monitoring Results
Limited Groundwater Sampling Program
1545 Woodroffe Avenue, Ottawa
Project No. 151-10565-00

Borehole/ Sample ID	Date	Free Product/ Sheen	PHC - F1	PHC - F2	PHC - F3	PHC - F4	Benzene	Toluene	Ethylbenzene	Xylenes
BH5	21-Apr-16	Sheen	14,800	14,800	1,080	3,190	12	5	25	135
	13-Jun-12	none	9,600	3,100	<100	<100	50	6	2,000	4,200
BH8	21-Apr-16	none	950	180	1,080	3,150	12	1	25	135
	15-Jun-12	none	1,300	820	<100	<100	46	4	610	34
BH11	21-Apr-16	none	17,500	3,230	<50	<50	15	525	928	4,740
	13-Jun-12	none	290	120	<100	<100	64	4	87	47
BH12	21-Apr-16	50mm	71,400	1,940,000	1,020,000	<50	2,680	8,920	2,970	16,900
	15-Jun-12	Sheen	2,300	1,400	<100	<100	680	490	500	450
BH13	21-Apr-16	none	6,340	770	160	590	31	76	1,790	1,250
	13-Jun-12	none	2,600	540	<100	<100	9	69	750	1,100

Notes:

DRAWINGS

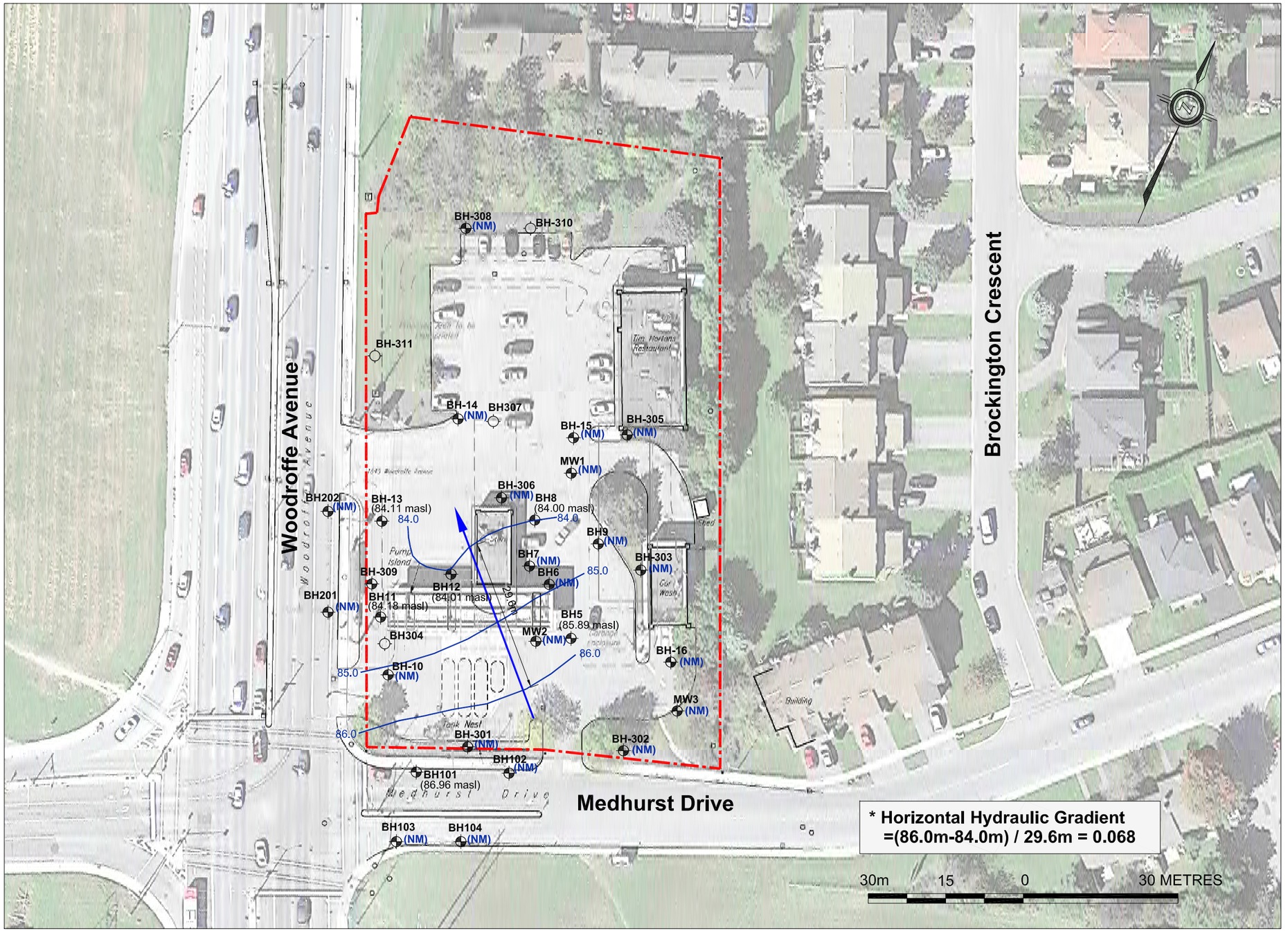
Key Plan
N.T.S.

Legend:

- Subject Property
- Existing Borehole
- Existing Borehole (no well)

WSP
351 STEELCASE ROAD, UNITS 9-12
MARKHAM, ONTARIO CANADA L3R 4H9
TEL.: 905-475-0065 | FAX: 905-475-0045 | WWW.WSPGROUP.COM

Client:	Mac's Convenience Stores / Couche Tard			Project No.: 151-10565-00 (220.31)	Drawing: 1
Drawn:	LWS	Approved:	RO	Discipline:	ENVIRONMENT
Date:	June 2016	Scale:	As Shown	Title:	Borehole Location Plan
Original Size:	Tabloid	Rev:	N/A	Project:	Limited Groundwater Monitoring and Sampling 1545 Woodroffe Ave, Ottawa, Ontario



Key Plan
N.T.S.

Legend:

- Subject Property
- Existing Borehole
- Existing Borehole (no well)
- 85.0 — Interpreted Groundwater 1.0m Contour (masl)
- Groundwater Flow Direction
- (NM) Not Monitored

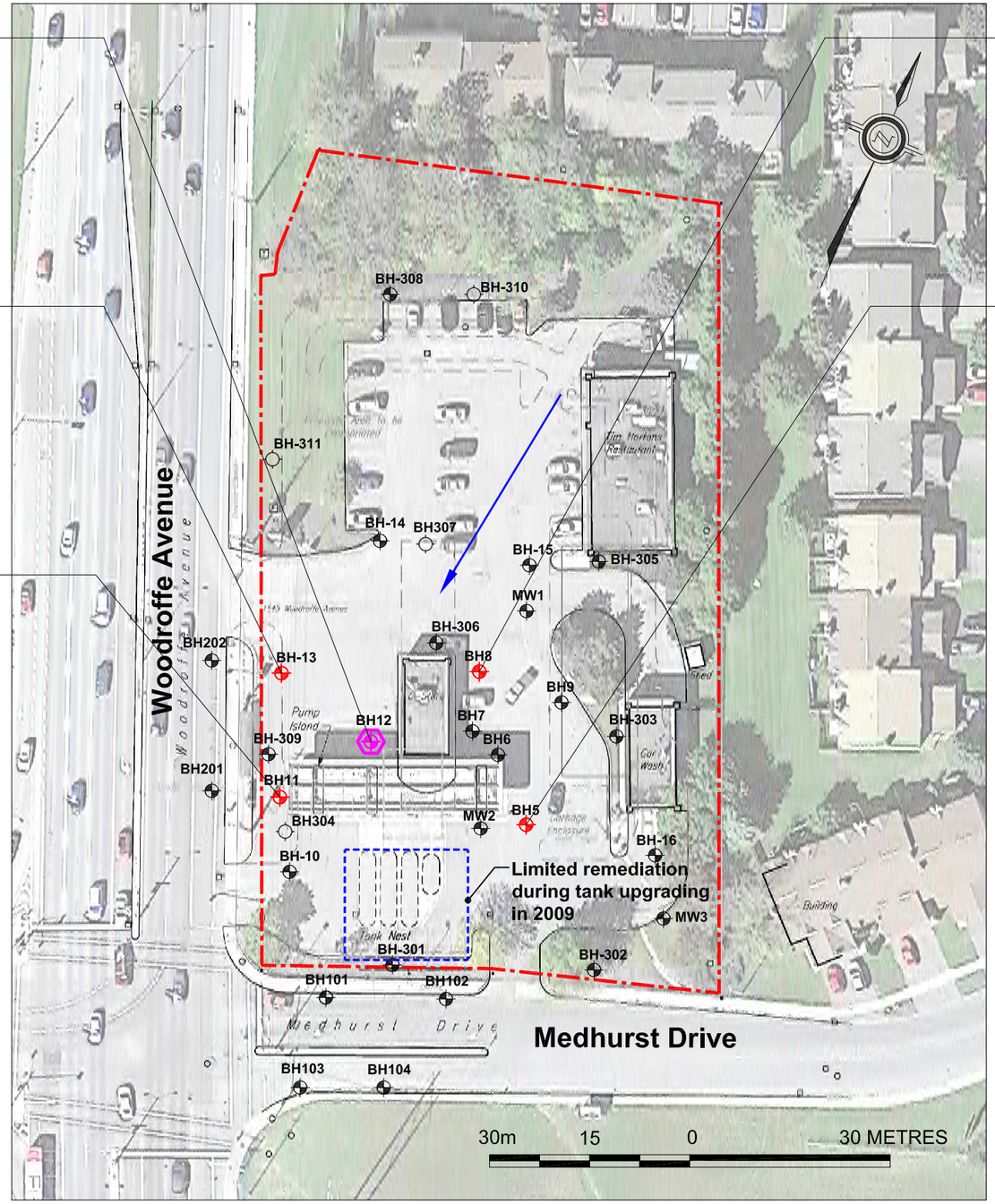
WSP
351 STEELCASE ROAD, UNITS 9-12
MARKHAM, ONTARIO CANADA L3R 4H9
TEL.: 905-475-0065 | FAX: 905-475-0045 | WWW.WSPGROUP.COM

Client:	Mac's Convenience Stores / Couche Tard			Project No.:	151-10565-00 (220.31)
Drawn:	LWS	Approved:	RO	Drawing:	2
Date:	June 2016	Scale:	As Shown	Discipline:	ENVIRONMENT
Original Size:	Tabloid	Rev:	N/A	Title:	Selected Groundwater Elevations and Inferred Groundwater Flow Direction - April 21, 2016
				Project:	Limited Groundwater Monitoring and Sampling 1545 Woodroffe Ave, Ottawa, Ontario

	Parameters	Table 3 SCSs	Value on April 21, 2016
BH12 (Screened 3.00 - 6.00 mbgs)	F1	750	71400
	F2	150	1940000
	F3	500	1020000
	F4	500	<50
	Benzene	44	2680
	Ethylbenzene	2300	2970
	Tetrachloroethane,1,1,1,2-	3.3	<50
	Tetrachloroethane,1,1,2,2-	3.2	250
	Xylene Mixture	4200	16900

	Parameters	Table 3 SCSs	Value on April 21, 2016
BH13 (Screened 3.70 - 6.10 mbgs)	F1	750	6340
	F2	150	770
	F3	500	160
	F4	500	590
	Benzene	44	31.0
	Ethylbenzene	2300	1290
	Tetrachloroethane,1,1,1,2-	3.3	<0.5
	Tetrachloroethane,1,1,2,2-	3.2	<0.5
	Xylene Mixture	4200	1250

	Parameters	Table 3 SCSs	Value on April 21, 2016
BH11 (Screened 3.10 - 6.10 mbgs)	F1	750	17500
	F2	150	3230
	F3	500	<50
	F4	500	<50
	Benzene	44	14.5
	Ethylbenzene	2300	928
	Tetrachloroethane,1,1,1,2-	3.3	<0.5
	Tetrachloroethane,1,1,2,2-	3.2	<0.5
	Xylene Mixture	4200	4740



	Parameters	Table 3 SCSs	Value on April 21, 2016
BH8 (Screened 4.50 - 6.00 mbgs)	F1	750	950
	F2	150	180
	F3	500	1080
	F4	500	3190
	Benzene	44	12.2
	Ethylbenzene	2300	252
	Tetrachloroethane,1,1,1,2-	3.3	5.9
	Tetrachloroethane,1,1,2,2-	3.2	<0.5
	Xylene Mixture	4200	135

	Parameters	Table 3 SCSs	Value on April 21, 2016
BH5 (Screened 1.80 - 4.60 mbgs)	F1	750	14800
	F2	150	14800
	F3	500	3820
	F4	500	3680
	Benzene	44	89.6
	Ethylbenzene	2300	894
	Tetrachloroethane,1,1,1,2-	3.3	31
	Tetrachloroethane,1,1,2,2-	3.2	0.8
	Xylene Mixture	4200	3520

Legend:

- Subject Property
- Not Sampled (Existing Borehole)
- Existing Borehole (no well)
- Exceedance of Table 3 SCSs
- Free Product Present
- Anticipated Groundwater Flow Direction

Site Condition Standards: MOECC Table 3

WSP
351 STEELCASE ROAD, UNITS 9-12
MARKHAM, ONTARIO CANADA L3R 4H9
TEL.: 905-475-0065 | FAX: 905-475-0045 | WWW.WSPGROUP.COM

Client:	Mac's Convenience Stores / Couche Tard			Project No.:	151-10565-00 (220.31)
Drawn:	LWS	Approved:	RO	Drawing:	3
Date:	June 2016	Scale:	As Shown	Discipline:	ENVIRONMENT
Original Size:	Tabloid	Rev:	N/A	Title:	Summary of Analytical Exceedances in Groundwater
				Project:	Limited Groundwater Monitoring and Sampling 1545 Woodroffe Ave, Ottawa, Ontario

APPENDIX A

MONITORING WELL PHOTOS

BH10 - NOT ACCESSIBLE

BH101 - DAMAGED (NOT SAMPLED)

BH102 - NOT ACCESSIBLE

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS

EXOVA ENVIRONMENTAL ONTARIO

Certificate of Analysis

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Temperature: 7

Dear Lisa Gardiner:

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

Report Comments:

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

All analysis is completed in Ottawa, Ontario (unless otherwise indicated).

Exova Ottawa is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on our CALA scope of accreditation. It can be found at http://www.cala.ca/scopes/2602.pdf.

Exova (Ottawa) is certified and accredited for specific parameters by OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils). Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is accredited for specific parameters by SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Exova recommends consulting the official provincial or federal guideline as required.

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	20	ug/L	STD-750		14800*	950*	71400*	6340*
	Petroleum Hydrocarbons F2	20	ug/L	STD-150		14800*	180*	1940000*	770*
	Petroleum Hydrocarbons F3	50	ug/L	STD-500		3820*	1080*	1020000*	160
	Petroleum Hydrocarbons F4	50	ug/L	STD-500		3680*	3190*	<50	590*
PHC Surrogates	O-Terphenyl	0	%			86	124	0	100
VOC Surrogates Rec	1,2-dichloroethane-d4	0	%			84	106	98	106
	4-bromofluorobenzene	0	%			119	118	119	118
	Toluene-d8	0	%			79	107	100	115
VOCs	Acetone	30	ug/L	STD-130000		<30	60		<30
		3000	ug/L	STD-130000				<3000	
	Benzene	0.5	ug/L	STD-44		89.6*	12.2		31.0
		50	ug/L	STD-44				2680*	
	Bromodichloromethane	0.3	ug/L	STD-85000		<0.3	<0.3		<0.3
		30	ug/L	STD-85000				<30	
	Bromoform	0.4	ug/L	STD-380		<0.4	<0.4		<0.4
		40	ug/L	STD-380				<40	
	Bromomethane	0.5	ug/L	STD-5.6		<0.5	<0.5		<0.5
		50	ug/L	STD-5.6				<50	
	Carbon Tetrachloride	0.2	ug/L	STD-0.79		<0.2	<0.2		<0.2
		20	ug/L	STD-0.79				<20	
	Chlorobenzene	0.2	ug/L	STD-630		<0.2	<0.2		<0.2
		20	ug/L	STD-630				<20	
	Chloroform	0.5	ug/L	STD-2.4		<0.5	0.6		<0.5
		50	ug/L	STD-2.4				<50	
	Dibromochloromethane	0.3	ug/L	STD-82000		<0.3	<0.3		<0.3
		30	ug/L	STD-82000				<30	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
VOCs	Dichlorobenzene, 1,2-	0.4	ug/L	STD-4600		<0.4	<0.4		<0.4
		40	ug/L	STD-4600				<40	
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-9600		<0.4	<0.4		<0.4
		40	ug/L	STD-9600				<40	
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-8		<0.4	<0.4		<0.4
		40	ug/L	STD-8				<40	
	Dichlorodifluoromethane	0.5	ug/L	STD-4400		<0.5	<0.5		<0.5
		50	ug/L	STD-4400				<50	
	Dichloroethane, 1,1-	0.4	ug/L	STD-320		<0.4	<0.4		<0.4
		40	ug/L	STD-320				<40	
	Dichloroethane, 1,2-	0.2	ug/L	STD-1.6		<0.2	<0.2		<0.2
		20	ug/L	STD-1.6				<20	
	Dichloroethylene, 1,1-	0.5	ug/L	STD-1.6		<0.5	<0.5		<0.5
		50	ug/L	STD-1.6				<50	
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-1.6		<0.4	<0.4		<0.4
		40	ug/L	STD-1.6				<40	
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-1.6		<0.4	<0.4		<0.4
		40	ug/L	STD-1.6				<40	
	Dichloropropane, 1,2-	0.5	ug/L	STD-16		<0.5	<0.5		<0.5
		50	ug/L	STD-16				<50	
	Dichloropropene,1,3-	0.2	ug/L	STD-5.2		<0.2	<0.2		<0.2
		20	ug/L	STD-5.2				<20	
	Dichloropropylene, 1,3-cis-	0.2	ug/L			<0.2	<0.2		<0.2
		20	ug/L					<20	
	Dichloropropylene, 1,3-trans-	0.2	ug/L			<0.2	<0.2		<0.2
		20	ug/L					<20	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
	Lab I.D.							
	Sample Matrix							
	Sample Type							
	Sampling Date							
	Sample I.D.							
VOCs	Ethylbenzene	0.5	ug/L	STD-2300	894	252		1290
		50	ug/L	STD-2300			2970*	
	Ethylene dibromide	0.2	ug/L	STD-0.25	<0.2	<0.2		<0.2
		20	ug/L	STD-0.25			<20	
	Hexane (n)	5	ug/L	STD-51	14	<5		21
		500	ug/L	STD-51			<500	
	Methyl Ethyl Ketone	10	ug/L	STD-470000	<10	<10		<10
		1000	ug/L	STD-470000			<1000	
	Methyl Isobutyl Ketone	10	ug/L	STD-140000	<10	<10		<10
		1000	ug/L	STD-140000			5000	
	Methyl tert-Butyl Ether (MTBE)	2	ug/L	STD-190	<2	<2		<2
		200	ug/L	STD-190			<200	
	Methylene Chloride	4.0	ug/L	STD-610	<4.0	<4.0		<4.0
		400	ug/L	STD-610			<400	
	Styrene	0.5	ug/L	STD-1300	<0.5	<0.5		10.5
		50	ug/L	STD-1300			270	
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-3.3	31.0*	5.9*		<0.5
		50	ug/L	STD-3.3			<50	
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-3.2	0.8	<0.5		<0.5
		50	ug/L	STD-3.2			250*	
	Tetrachloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3		<0.3
		30	ug/L	STD-1.6			<30	
	Toluene	0.5	ug/L	STD-18000	5.1	1.0		76.2
		50	ug/L	STD-18000			8920	
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-640	<0.4	<0.4		<0.4
		40	ug/L	STD-640			<40	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1236175 GW (Reg 153) - 2016-04-21 BH 5	1236176 GW (Reg 153) - 2016-04-21 BH 8	1236177 GW (Reg 153) - 2016-04-21 BH 12	1236178 GW (Reg 153) - 2016-04-21 BH 13
VOCs	Trichloroethane, 1,1,2-	0.4	ug/L	STD-4.7		<0.4	<0.4		<0.4
		40	ug/L	STD-4.7				<40	
	Trichloroethylene	0.3	ug/L	STD-1.6		<0.3	<0.3		<0.3
		30	ug/L	STD-1.6				<30	
	Trichlorofluoromethane	0.5	ug/L	STD-2500		<0.5	<0.5		<0.5
		50	ug/L	STD-2500				<50	
	Vinyl Chloride	0.2	ug/L	STD-0.5		<0.2	<0.2		<0.2
		20	ug/L	STD-0.5				<20	
	Xylene Mixture	0.5	ug/L	STD-4200		3520	135		1250
		50	ug/L	STD-4200				16900*	
	Xylene, m/p-	0.4	ug/L			3390	122		1080
		40	ug/L					11600	
	Xylene, o-	0.4	ug/L			135	12.9		166
		40	ug/L					5280	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	1236179 GW (Reg 153) - 2016-04-21 BH 1013	1236180 GW (Reg 153) - 2016-04-21 BH 11	1236181 GW (Reg 153) - 2016-04-21 Trip Blank
	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.						
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	20	ug/L	STD-750	6290*	17500*	
	Petroleum Hydrocarbons F2	20	ug/L	STD-150	800*	3230*	
	Petroleum Hydrocarbons F3	50	ug/L	STD-500	170	<50	
	Petroleum Hydrocarbons F4	50	ug/L	STD-500	560*	<50	
PHC Surrogates	O-Terphenyl	0	%		98	102	
VOC Surrogates Rec	1,2-dichloroethane-d4	0	%		103	104	107
	4-bromofluorobenzene	0	%		121	124	111
	Toluene-d8	0	%		120	117	101
VOCs	Acetone	30	ug/L	STD-130000	<30	<30	<30
	Benzene	0.5	ug/L	STD-44	33.1	14.5	<0.5
	Bromodichloromethane	0.3	ug/L	STD-85000	<0.3	<0.3	<0.3
	Bromoform	0.4	ug/L	STD-380	<0.4	<0.4	<0.4
	Bromomethane	0.5	ug/L	STD-5.6	<0.5	<0.5	<0.5
	Carbon Tetrachloride	0.2	ug/L	STD-0.79	<0.2	<0.2	<0.2
	Chlorobenzene	0.2	ug/L	STD-630	<0.2	<0.2	<0.2
	Chloroform	0.5	ug/L	STD-2.4	<0.5	<0.5	<0.5
	Dibromochloromethane	0.3	ug/L	STD-82000	<0.3	<0.3	<0.3
	Dichlorobenzene, 1,2-	0.4	ug/L	STD-4600	<0.4	<0.4	<0.4
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-9600	<0.4	<0.4	<0.4
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-8	<0.4	<0.4	<0.4
	Dichlorodifluoromethane	0.5	ug/L	STD-4400	<0.5	<0.5	<0.5
	Dichloroethane, 1,1-	0.4	ug/L	STD-320	<0.4	<0.4	<0.4
	Dichloroethane, 1,2-	0.2	ug/L	STD-1.6	<0.2	<0.2	<0.2
	Dichloroethylene, 1,1-	0.5	ug/L	STD-1.6	<0.5	<0.5	<0.5
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-1.6	<0.4	<0.4	<0.4
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-1.6	<0.4	<0.4	<0.4

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Group	Analyte	MRL	Units	Guideline	1236179 GW (Reg 153) - 2016-04-21 BH 1013	1236180 GW (Reg 153) - 2016-04-21 BH 11	1236181 GW (Reg 153) - 2016-04-21 Trip Blank
	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.						
VOCs	Dichloropropane, 1,2-	0.5	ug/L	STD-16	<0.5	<0.5	<0.5
	Dichloropropene,1,3-	0.2	ug/L	STD-5.2	<0.2	<0.2	<0.2
	Dichloropropylene, 1,3-cis-	0.2	ug/L		<0.2	<0.2	<0.2
	Dichloropropylene, 1,3-trans-	0.2	ug/L		<0.2	<0.2	<0.2
	Ethylbenzene	0.5	ug/L	STD-2300	1270	928	<0.5
	Ethylene dibromide	0.2	ug/L	STD-0.25	<0.2	<0.2	<0.2
	Hexane (n)	5	ug/L	STD-51	23	<5	<5
	Methyl Ethyl Ketone	10	ug/L	STD-470000	<10	<10	<10
	Methyl Isobutyl Ketone	10	ug/L	STD-140000	<10	<10	<10
	Methyl tert-Butyl Ether (MTBE)	2	ug/L	STD-190	<2	<2	<2
	Methylene Chloride	4.0	ug/L	STD-610	<4.0	<4.0	<4.0
	Styrene	0.5	ug/L	STD-1300	10.9	<0.5	<0.5
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-3.3	<0.5	<0.5	<0.5
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-3.2	<0.5	<0.5	<0.5
	Tetrachloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3	<0.3
	Toluene	0.5	ug/L	STD-18000	62.5	525	<0.5
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-640	<0.4	<0.4	<0.4
	Trichloroethane, 1,1,2-	0.4	ug/L	STD-4.7	<0.4	<0.4	<0.4
	Trichloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3	<0.3
	Trichlorofluoromethane	0.5	ug/L	STD-2500	<0.5	<0.5	<0.5
	Vinyl Chloride	0.2	ug/L	STD-0.5	<0.2	<0.2	<0.2
	Xylene Mixture	0.5	ug/L	STD-4200	1240	4740*	<0.5
	Xylene, m/p-	0.4	ug/L		1080	3540	<0.4
	Xylene, o-	0.4	ug/L		160	1200	<0.4

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 290004 **Analysis/Extraction Date** 2016-04-22 **Instrument** GC/FID			
Method O CCME Reg 153 **Analyst** TJB			
Petroleum Hydrocarbons F1	<20 ug/L	96	60-140
Method V 8260B **Analyst** TJB			
Dichloropropene,1,3-			
Acetone	<30 ug/L	117	60-130
Methyl Ethyl Ketone	<10 ug/L	104	60-130
Methyl Isobutyl Ketone	<10 ug/L	107	60-130
Methyl tert-Butyl Ether (MTBE)	<2 ug/L	97	60-130
Run No 306563 **Analysis/Extraction Date** 2016-04-22 **Instrument** GC/MS			
Method V 8260B **Analyst** TJB			
Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	113	60-130
Trichloroethane, 1,1,1-	<0.4 ug/L	107	60-130
Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	111	60-130
Trichloroethane, 1,1,2-	<0.4 ug/L	111	60-130

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichloroethane, 1,1-	<0.4 ug/L	96	60-130
Dichloroethylene, 1,1-	<0.5 ug/L	99	60-130
Dichlorobenzene, 1,2-	<0.4 ug/L	97	60-130
Dichloroethane, 1,2-	<0.2 ug/L	101	60-130
Dichloropropane, 1,2-	<0.5 ug/L	115	60-130
Dichlorobenzene, 1,3-	<0.4 ug/L	114	60-130
Dichlorobenzene, 1,4-	<0.4 ug/L	109	60-130
Benzene	<0.5 ug/L	99	60-130
Bromodichloromethane	<0.3 ug/L	108	60-130
Bromoform	<0.4 ug/L	113	60-130
Bromomethane	<0.5 ug/L	107	60-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	95	60-130
Dichloropropene,1,3-cis-	<0.2 ug/L	109	60-130
Carbon Tetrachloride	<0.2 ug/L	102	60-130
Chloroform	<0.5 ug/L	106	60-130
Dibromochloromethane	<0.3 ug/L	101	60-130
Dichlorodifluoromethane	<0.5 ug/L	92	60-130
Methylene Chloride	<4.0 ug/L	105	60-130

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Ethylbenzene	<0.5 ug/L	109	60-130
Ethylene dibromide	<0.2 ug/L	108	60-130
Hexane (n)	<5 ug/L	110	60-130
m/p-xylene	<0.4 ug/L	112	60-130
Chlorobenzene	<0.2 ug/L	98	60-130
o-xylene	<0.4 ug/L	112	60-130
Styrene	<0.5 ug/L	98	60-130
Dichloroethylene, 1,2-trans-	<0.4 ug/L	96	60-130
Dichloropropene,1,3-trans-	<0.2 ug/L	114	60-130
Tetrachloroethylene	<0.3 ug/L	103	60-130
Toluene	<0.5 ug/L	106	60-130
Trichloroethylene	<0.3 ug/L	108	60-130
Trichlorofluoromethane	<0.5 ug/L	106	60-130
Vinyl Chloride	<0.2 ug/L	95	60-130
Run No 306564	**Analysis/Extraction Date** 2016-04-22	**Instrument** GC/MS	
Method V 8260B	**Analyst** TJB		
Xylene Mixture			
Run No 306568	**Analysis/Extraction Date** 2016-04-22	**Instrument** GC/FID	

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Method O CCME Reg 153	**Analyst** JLD		
Petroleum Hydrocarbons F2	<20 ug/L	90	60-140
Petroleum Hydrocarbons F3	<50 ug/L	90	60-140
Petroleum Hydrocarbons F4	<50 ug/L	90	60-140

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Sample Comment Summary

Sample ID: 1236177 BH 12 VOC MRL's elevated due to matrix interference (dilution was done).

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

Client: WSP (Peterborough)
294 Rink Street, Suite 103
Peterborough, ON
K9J 2K2
Attention: Mr. Lisa Gardiner
PO#:
Invoice to: WSP (Peterborough)

Report Number: 1605988
Date Submitted: 2016-04-21
Date Reported: 2016-04-22
Project: 151-10565-00,220.31 (1545 Woodroffe Ave.)
COC #: 807185

Petroleum Hydrocarbons - CCME Checklist

Samples were analysed by Exova Ottawa Method AMCCME2, "Petroleum Hydrocarbons in Water and Soil, CCME/TPH" or Exova Mississauga Method 11-09-SP-2322, "Petroleum Hydrocarbons in Water and Soil, CCME/TPH". These methods comply with the reference method for the CCME CWS PHC and are validated for use in the laboratory. Exova Ottawa is accredited by CALA (ISO 17025) for all CCME F1-F4 fractions as listed in this report. Exova Mississauga is accredited by SCC (ISO 17025) for all CCME F1-F4 fractions as listed in this report. Data for QC samples (blank, duplicate, spike) are available on request

Holding/Analysis Times	Yes/No	If NO, then reasons
All fractions analyzed within recommended hold times/analysis times?	Yes	
F1		
nC6 and nC10 response factors within 30% of toluene	Yes	
BTEX was subtracted from F1 fraction		
If YES, was F1-BTEX (C6-C10) reported		
F2		
nC10, nC16 and nC34 response factors within 10% of their average (F2-F4)	Yes	
Linearity within 15% (F2-F4)	Yes	
Napthalene was subtracted from F2 fraction		Naphthalene (PAH) not requested/analysed
If YES was F2-Napthalene reported		
F3		
PAH (selected compounds) subtracted from F3 fraction		PAH not requested/analysed
If YES was F3-PAH reported		
F4		
C50 response factor within 70% of nC10+nC16+nC34 average	Yes	
Chromatogram descended to baseline by retention time of C50	Yes	
if NO was F4 (C34-C50) gravimetric reported		

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

*All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

CHAIN OF CUSTODY

807185

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

LABORATORY USE ONLY
Report #: 1605988

Report Information*:
Client: WSP CANADA INC.
Contact: Phil Romeril, Lisa Gardiner
Address: 294, Rink Street, Suite 103 Peterborough, Ontario K9J 2K2 Canada
Email: lisa.gardiner@wspgroup.com Phone: 613-617-9237
Project: 151-10565-00. 220.31 (1545 Woodroffe Ave)

Invoice Information*:
Invoice to the same as above? Yes / (No) or:
Client: WSP CANADA INC.
Contact: Lisa Gardiner
Address: 294, Rink Street, Suite 103 Peterborough, Ontario K9J 2K2 Canada
Email: Lisa.Gardiner@wspgroup.com Phone: 705-743-6650 #228
Purchase Order #:
Exova Quote # *: 160176

Criteria Required*:
☐ ODWSOG ☐ Other, Specify:
☐ PWQO
☐ Ont. Reg. 558
☐ CCME
☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☑ Ont. Reg 153/04
Table # 3, Coarse/Fine, Surface/Subsurface
Type: Com-Ind / Res-Park / Agri / GW / Other

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04 *:
YES ☑ / NO ☐

Is this a drinking water sample? YES / (NO)*
If yes, complete the drinking water COC

Additional Email/Fax:
1. Email: phil.romeril@wspgroup.com
2. Email: kathryn.maton@wsogroup.com
3. Email:
Fax:

Report Format:
☑ PDF ☑ Excel ☐ Other, Specify:

Turnaround Time (*rush surcharges may apply*)*:
☐ 5 Business Days (Standard)
☐ 3 Business Days (Rush)
☐ 2 Business Days (Rush)
☑ 1 Business Day (Rush)
☐ Other (specifiy date):

Notes:

* Indicates a required field
Please note that incomplete information may result in turnaround time delays.
Samples should be kept cool (4-10°C) from sampling time through drop-off at the laboratory.

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location	Parameters: PHC F1-F4	VOCs	Metals	Lab Use Only
BH5	21/04/2016 /5pm	GW	3	1545 Woodroffe Ave	X	X		1236175
BH8	4:30pm				X	X		76
BH12	4pm				X	X		77
BH13	5:30pm				X	X		78
BH1013					X	X		79
BH11	3pm		2		X	X		80
Trip Blank						X		81

Samples Relinquished By:	Date/Time:	Samples Received By:	Date/Time:	Temperature:	Condition:
Kathryn Maton	21/04/2016 /17:17			7°	
	Date/Time:	Samples Received By: YK	Date/Time: 21/04 1715	Page # of	

FUEL DISTRIBUTION SYSTEM UPGRADE & REMEDIAL EXCAVATION
1545 WOODROFFE AVENUE (AT MEDHURST DRIVE)
OTTAWA, ONTARIO

Submitted to:

Imperial Oil Limited
90 Wynford Drive
Toronto, Ontario M3C 1K5

Submitted by:

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.

3715 Laird Road, Suite 100
Mississauga, Ontario L5L 0A3
Phone: (905) 820-1210
Fax: (905) 820-1221

Prepared by: Nancy Haywood, A.Sc.T. **Reviewed by: Gerry Parrott, P.Geo.**

October 13, 2009

O'Connor Reference No.: 10-8518T01

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

These documents and the information contained therein are confidential property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-83, c.111, Sch.II"1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch.I"1", as such legislation may be amended from time to time.

SUMMARY OF ACTIVTIES

Location: 1545 Woodroffe Avenue at Medhurst Drive, Ottawa, Ontario	Details
Type of Facility	Active petroleum retail fuel outlet
Municipal Zoning	Main Parcel: GM15H(9.5) - General Mixed-Use zone, subzone 15, height restriction of 8 m Triangular parcel on the north side of the Site: RTDWW – Residential Third Density zone, subzone WW
Scope of Work	Monitoring well abandonment, underground storage tank (UST) and associated distribution system upgrade (i.e., removal and installation of new USTs and distribution system) excavation monitoring.
Date(s) of Well Abandonment	May 8, 2009
Number of Wells Abandoned	4
Date(s) of Construction and Remedial Excavation	May 11 to June 24, 2009
Number of Test Pits Advanced	2
Maximum Depth of Excavation	4.5 mbgs
Approximate Excavation Floor Area	409 m^2
Approximate Piping and Pump Island Floor Area	264 m^2
Approximate Total Volume of Soil Excavated	1635 m^3 (3270 tonnes)
Estimate of Impacted Soil Volume Disposed Off-Site	1085 m^3 (2170 tonnes)
Final Floor Samples that Exceeded Reference Criteria	None
Final Wall Samples that Exceeded Reference Criteria	4
Type of Organic Vapour Meter Used	Gastechtor 1238ME or RKI EAGLE
Adjacent Land Use	Woodroffe Avenue to the west, Medhurst Avenue to the south, and residential to the east and north.
Aquifer Usage in 100 m radius	None
Reference Standards	MOE Table 3 (non-potable) site condition standards for industrial/commercial/community land use, medium and fine textured soils.

PROPOSED TANK NEST LOCATION TEST PIT DETAILS:

Description	TP1	TP2
Well Installed	No	No
Depth (mbgs)	4.1	4.5
Dominant Soil Type	Sand (fill) overlying silty clay	Sand (fill) overlying silty clay
Free Product Observed	No	No
Vertical Soil Impact Delineation Achieved	Yes	Yes

NUMBER OF REMEDIAL SOIL SAMPLES COLLECTED:

EXCAVATION FINAL FLOOR	EXCAVATION FINAL WALL	IMPORTED BACKFILL	NON-IMPACTED SOIL (REUSED AS BACKFILL)	TEST PITS	IMPACTED SOIL (REMOVED FROM SITE)	FIELD DUPLICATES
27	29	3	15	8	13	9

Notes: **mbgs - metres below ground surface**
MOE - Ontario Ministry of the Environment

TABLE OF CONTENTS

Page

SUMMARY OF ACTIVTIES ..... **i**

1.0 INTRODUCTION **1**
1.1 Background **1**
1.2 Scope of Work **1**

2.0 ACTIVITIES **2**
2.1 Monitoring Well Abandonment **2**
2.2 Pre-Construction Test Pitting Activities **2**
2.3 Construction and Remediation Activities **2**
2.3.1 Underground Storage Tank and Associated Facilities Removal ***3***
2.3.2 Excavation ***4***
2.3.3 Subsurface Structures ***4***
2.3.4 Water Management ***5***
2.4 Soil Screening and Sampling **5**
2.5 Site Restoration and Geotechnical Materials Testing **6**
2.6 Laboratory Analysis **6**

3.0 FINDINGS **7**
3.1 Field Observations **7**
3.1.1 Stratigraphy ***7***
3.1.2 Subsurface Vapour Concentrations ***7***
3.1.3 Groundwater ***7***
3.1.4 Free Product ***7***
3.2 Selected Site Condition Standards **7**
3.3 Soil Analytical Results **8**
3.4 Quality Assurance/Quality Control Results **9**

4.0 SUMMARY AND CONCLUSIONS **9**

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE **10**

LIST OF TABLES:

Table I	**Soil Analytical Results – Petroleum-Related Parameters – UST Excavation-Floor**
Table II	**Soil Analytical Results – Petroleum-Related Parameters –Pump Island Area-Floor**
Table III	**Soil Analytical Results – Petroleum-Related Parameters – UST Excavation-Walls**
Table IV	**Soil Analytical Results – Petroleum-Related Parameters – Base of Test Pits**
Table V	**Soil Analytical Results – Petroleum-Related Parameters – Segregated (Non-Impacted)**
Table VI	**Soil Analytical Results – Petroleum-Related Parameters – Imported Backfill**
Table VII	**Soil Analytical Results – Inorganic Parameters – Imported Backfill**

LIST OF DRAWINGS:

Drawing No. 1	**Site Location**
Drawing No. 2	**Site Plan and Surrounding Land Use**
Drawing No. 3	**Site Plan and Limits of Excavation**
Drawing No. 4	**Soil Vapour Concentrations on the Floor of the UST and Pump Island Excavations**
Drawing No. 5	**Soil Vapour Concentrations on the Walls of the UST Excavation**

APPENDICES:

Appendix A	**Well Abandonment Record**
Appendix B	**Test Pit Logs**
Appendix C	**Laboratory Certificates of Analysis**
Appendix D	**Analytical Results – Soils Removed from the Site**
Appendix E	**Quality Assurance and Quality Control**

1.0 INTRODUCTION

Imperial Oil Limited retained O'Connor Associates Environmental Inc. to: (1) abandon selected wells in the vicinity of fuel distribution equipment prior to upgrading that equipment, and (2) monitor an excavation advanced to facilitate installation of the new fuel distribution equipment at the active Esso retail fuel outlet, located at 1545 Woodroffe Avenue in Ottawa, Ontario (the Site).

The purpose of the excavation was to: (1) further assess the extent of petroleum hydrocarbon (PHC) impacted soil previously identified in the area of the existing fuelling facilities (i.e, the underground storage tanks (USTs), distribution piping and pump island/dispensers) during its removal, (2) assess potential PHC-impacts in soil in the vicinity of the new proposed tank nest location, and (3) remediate, by excavation and off-site disposal, easily accessible PHC-impacted soil exceeding the Ontario Ministry of the Environment (MOE) site condition standards in the vicinity of the former and new tank nest locations and the existing pump island. The fieldwork was conducted between May 11 and June 24, 2009.

1.1 Background

The Site location and regional topographic features are shown on Drawing No. 1. A Site plan, showing existing and proposed facilities, and surrounding land use, is presented as Drawing No. 2.

The Site has been used as a service station since the early 1960's, before which time the land was used for agricultural purposes. The service station repair garage location was moved from its original location in the 1980's and in 1993, it was converted to a Tim Hortons restaurant. The Site is currently an active petroleum retail outlet with a convenience store, carwash, Tim Hortons restaurant, five gasoline USTs, one diesel UST, and three pump islands and associated fuel distribution lines.

The new proposed USTs will be located immediately south of the concrete pump island apron and the new pump islands will be located in the same location as the previous pump islands.

1.2 Scope of Work

The scope of work involved the following main tasks:

- Abandoning four on-Site monitoring wells (BH1 to BH4).
- Advancing two test pits to assess the extent of potential PHC-impact in the vicinity of the new tank nest location.
- Monitoring excavation activities during the removal of the existing equipment and installation of the new equipment.

- Monitoring and sampling of impacted soil taken to landfill, non-impacted soil re-used as backfill, and backfill material imported to the Site.
- Collecting and submitting soil samples from the final walls and floors of the excavations and from the test pits for laboratory analyses of the following parameters: benzene, toluene, ethylbenzene and xylene (BTEX), PHC in the F1 to F4 fractions and lead.
- Subcontracting geotechnical materials testing to facilitate the upgrade activities.
- Prepare a report summarizing the investigation activities and findings.

2.0 ACTIVITIES

All field procedures were conducted in accordance with the Ontario MOE document entitled *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (1996), or MOE draft *Guideline for Phase II Environmental Site Assessments in Ontario* (March 22, 2006), and generally accepted industry practices.

2.1 Monitoring Well Abandonment

On May 8, 2009, BH1 to BH4 were abandoned by over-drilling. The well casing was drilled out to the bottom of each borehole and abandoned in accordance with Ontario Regulation 903. A copy of the well abandonment record is presented in Appendix A. The remaining wells (BH5 to BH7) were maintained for future use.

2.2 Pre-Construction Test Pitting Activities

Berkim Construction Inc. (Berkim) was retained by Imperial Oil to advance the test pits. Prior to advancing the test pits, Berkim arranged to have utility company representatives locate subsurface utilities in the work area. A total of two test pits (TP1 and TP2) were advanced in the proposed tank nest area on May 11, 2009. The test pits were advanced to 4.1 m below ground surface (mbgs) and 4.5 mbgs. The soil excavated from the test pits was returned to each test pit excavation after samples were collected. The soil was generally replaced in the same sequence it was removed. The test pit logs are presented in Appendix B.

2.3 Construction and Remediation Activities

Berkim was retained by Imperial Oil to complete the fuel distribution equipment upgrade. Under the direction and supervision of Berkim, Tweedale Sewer and Water Services (Tweedale) conducted all

of the associated excavation work required to facilitate removal of the old equipment and installation of the new equipment. O'Connor Associates monitored the activities on-Site on an as needed basis.

Prior to proceeding with the excavation activities, Berkim arranged to have utility company representatives locate subsurface utilities in the work area.

The equipment upgrade activities were undertaken between May 11 and June 24, 2009. Activities included the removal of six existing USTs, associated piping, pump island/dispensers, and associated concrete pads; the installation of five new USTs and associated equipment, and the removal of PHC-impacted soil. The pump island canopy and its foundation were not removed. The extent of the excavation is shown on Drawing No. 3.

2.3.1 Underground Storage Tank and Associated Facilities Removal

Prior to removing the USTs, Greyfield Construction Co. Ltd., under contract to Berkim, installed a permanent pile and lagging shoring system. The shoring system was installed south of the existing USTs on the south property line. The shoring was installed to facilitate removal of the USTs and to facilitate excavation of potentially impacted soil as close as practicable to the south property line. The location of the shoring is shown on Drawing No. 3.

As indicated, six USTs were identified on plans provided by Imperial Oil. However, during the excavation work, a seventh UST was found. This UST was located south of the pump island and was likely associated with the former service station. The location of the seventh UST is shown on Drawing No. 3.

The USTs and associated equipment were removed on May 12, 2009. O'Connor Associates monitored and documented the work and collected soils samples from the walls and floor of the excavation.

Details of the USTs removed are summarized as follows:

UST No.	Product Type	Capacity (L)
U1	Gasoline	13 600
U2	Gasoline	22 700
U3	Gasoline	22 700
U4	Diesel	13 600
U5	Gasoline	13 600

UST No.	Product Type	Capacity (L)
U6	Gasoline	22 700
U7	Unknown (suspected furnace oil)	2 273

A total of approximately 2605 L of class 221 I liquid was removed from the USTs using a vacuum truck supplied by Triangle Pump Services and transported to Veolia Environmental Services. Subsequently, each UST was purged with dry ice prior to their removal. After the fluids were removed and the purging was complete, each UST was cut open using the excavator bucket. Upon removal, each tank was inspected by O'Connor Associates personnel and transported off-site to Palmer Recycling Ltd., located in Ottawa, Ontario.

2.3.2 Excavation

After the USTs were removed, the excavation was expanded by "free digging" with a track-mounted excavator. All of the excavation walls, with the exception of the south wall adjacent to the vertical shoring, were sloped 1:1. The final floor area of the excavation advanced to remove the existing USTs and installed the new USTs was approximately 409 m^2. The maximum depth of the excavation was approximately 4.5 mbgs near the south west corner. A second excavation was advanced in the area of the pump islands. The final floor area of this excavation was 264 m^2 and extended to a depth of 0.3 mbgs with the exception of the furthest pump island to the west which was extended to a maximum depth of 1.0 mbgs to facilitate removal of the PHC-impacted soil.

Approximately 1635 m^3 (3270 tonnes) of soil was excavated from both excavations. The excavated soil was segregated into either impacted or potentially non-impacted stockpiles, based on soil vapour concentration measurements and/or visual observations. Approximately 1085 m^3 (2170 tonnes) of impacted soil was transported off-site for disposal at the Waste Management Landfill in Carp, Ontario. Approximately 550 m^3 (1100 tonnes) of soil was segregated and re-used as backfill based on receipt of satisfactory analytical results and field observations, including soil vapour concentration measurements.

Soil headspace vapour concentrations were measured using a calibrated combustible gas detector (Gastech Model 1238ME or RKI EAGLE) having a minimum detection level of 5 parts per million (ppm). The gas detector was operated in the methane elimination mode and the calibration was verified each day and, if required, the instrument was recalibrated.

2.3.3 Subsurface Structures

All underground piping and concrete encountered in the excavations were removed. The steel was transported off-site for recycling at Palmer Recycling Ltd., in Ottawa, Ontario.

2.3.4 Water Management

During the construction and remedial excavation activities, no groundwater was encountered; therefore, water treatment was not required.

2.4 Soil Screening and Sampling

Soil samples were collected from the excavator bucket at regular depth intervals of 0.5 m in the test pits using a stainless steel trowel and clean nitrile gloves. The trowel was washed prior to collection of each soil sample. Each soil sample was immediately split and one portion of the sample was sealed in a clean plastic bag for field screening which included determining textural description, evidence of impact (e.g., staining or free product), and soil headspace vapour concentrations. The remainder of the sample was promptly placed in containers supplied by the laboratory and stored in coolers with ice for possible analysis.

Four soil samples from each test pit were selected for laboratory analyses, based on sample location and/or field screening results. One sample was submitted from the depth that exhibited the highest headspace vapour reading or visual evidence of contamination, two additional samples were selected to further assess the vertical extent of impact, and one sample was submitted from the bottom of the test pit.

Soil samples were recovered at regular intervals from the walls and floors of the completed UST excavation and from the final floor of the pump island area excavation. Wall samples were collected along vertical profiles spaced 3 m horizontally with a vertical sampling frequency of every 1 m. The floors were sampled on a 3 m by 3 m grid.

Soil samples were collected from the segregated (non-impacted) and segregated (impacted) stockpiles as well as the imported backfill using a stainless steel trowel and clean nitrile gloves. Soil samples from the non-impacted and impacted piles were recovered at a frequency of approximately one sample for every 100 tonnes of material.

Headspace vapour concentrations were measured and locations with the highest headspace vapour measurement or visual evidence of impact were submitted for laboratory analyses.

Soil sampling details are presented in the test pit logs in Appendix B and on excavation Drawings No. 4 and No. 5.

2.5 Site Restoration and Geotechnical Materials Testing

A total of 4 new USTs were installed south of the existing pump island area. The USTs consisted of: three 50 000 L gasoline USTs and one 25 000 L diesel UST. In addition, new distribution piping and fuel pumps were installed. The location of the new USTs are presented on Drawing No. 3.

The excavation was backfilled with approximately 1100 tonnes of segregated (non-impacted) soil that satisfied the selected restoration standard, and 1085 tonnes of imported granular B material. The excavation was compacted to 95% for the imported granular material and 98% for all of the segregated (non-impacted) soil with a sheep's foot and a smooth drummed roller. Geotechnical inspections were undertaken by Houle Chevrier Engineering. Results of the materials testing (compaction test results and field density reports, granular material conformance, concrete compressive strength and asphalt mix specifications) and Site inspections have been presented under separate cover.

2.6 Laboratory Analysis

Soil samples selected for laboratory analyses included: (1) 8 samples from the test pits; (2) 26 samples from the final walls of the UST excavations; (3) 29 samples from the final floors of the UST and pump island area excavation; (4) 15 samples of segregated (non-impacted) soil reused as backfill; and (5) three samples of imported backfill.

In addition, 13 samples from interim excavation walls and floors, test pits, and segregated soil unsuitable for re-use on-Site were collected and submitted for analysis.

All of the soil samples were submitted for laboratory analyses of BTEX, PHC fractions F1 to F4 and lead. QA/QC samples submitted for laboratory analysis included one field duplicate sample from the test pits, one field duplicate sample from the piping and pump island area, and seven field duplicate samples from the excavation walls.

Samples were submitted to the Maxxam Analytics Inc. (Maxxam) laboratory in Mississauga. Maxxam is accredited by the Standards Council of Canada for the testing of all parameters listed in Ontario Regulation 153/04 under the Environmental Protection Act. Analytical methods used by the laboratory are referenced in the Certificates of Analysis presented in Appendix C. Analytical procedures were conducted in accordance with the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (2004).

3.0 FINDINGS

3.1 Field Observations

3.1.1 Stratigraphy

The stratigraphic profile encountered with increasing depth in the test pits and excavations generally consisted of asphalt, sand fill, sandy clay and silt, and sand. Detailed stratigraphic descriptions are presented on the test pit logs in Appendix B.

3.1.2 Subsurface Vapour Concentrations

Headspace vapour concentrations measured in the soil samples recovered from the test pits are presented on the logs in Appendix B. The vapour concentrations ranged from not detected (< 5 parts per million (ppm)) to >100% of the lower explosive limit (LEL).

Headspace vapour concentrations measured in the soil samples recovered from the floors and walls of the UST and pump island area excavations are presented on Drawings No. 4 and No. 5. As indicated, the vapour concentrations for the samples collected from the floors ranged from not detected (< 5 ppm) to 500 ppm and the vapour concentrations from the samples collected from the walls ranged from not detected (< 5 ppm) to >100% LEL.

Headspace vapour concentrations measured in the segregated (non-impacted) stockpile samples ranged from 5 ppm to >100% LEL. Headspace vapour concentrations measured in the imported backfill samples ranged from not detected to 5 ppm. Headspace vapour concentrations measured in the segregated (impacted) stockpile samples ranged from 200 ppm to >100% LEL.

3.1.3 Groundwater

Groundwater was not observed in the test pits or excavations.

3.1.4 Free Product

Light non-aqueous phase liquids (free product) was not observed in any of the soil samples collected from the test pits or from the samples collected from the final walls and floors of the excavations.

3.2 Selected Site Condition Standards

Ontario Regulation 153/04 provides two optional approaches for environmental assessment and, if required, remediation of property in Ontario: the use of site condition standards or preparation of a

site-specific risk assessment. For the current investigation, the approach to use site condition standards was selected.

The Site would not be considered environmentally sensitive, based on the following:

- The Site is not within or adjacent to an area of natural significance;
- A soil sample pH value was not less than 5 and not greater than 11; and,
- The bedrock surface is more than 2 mbgs below more than two-thirds of the Site area.
- There were no surface water bodies identified within 30 m of the Site.

Consequently, the full depth generic site condition standards were selected for use. The following additional conditions were deemed applicable:

- Non-potable groundwater condition, as the Site and nearby properties are supplied by the City of Ottawa municipal water supply system, which obtains water from the Ottawa River.
- Medium and fine textured soils, as determined by grain size analysis from previous investigations as well as all other data collected to date in the area of the investigations as well as all other data collected to date in the area of the investigation, which indicated that at least two-thirds of the native subsoil contains more than 50% of particles that are smaller than 75 um in diameter.
- Industrial/commercial/community property use, as the current and intended future use of the Site is commercial.

Based on the above discussion, the applicable MOE (2004) Table 3 (non-potable) full depth site condition standards for industrial/commercial/community land use with medium and fine textured soils were selected for comparison with the soil analytical results.

3.3 Soil Analytical Results

The analytical results for the soil samples collected from the final floor of the UST excavation is presented and compared to applicable MOE Table 3 standards in Table I. As indicated, all results satisfied the MOE Table 3 standards. The sample locations are presented on Drawing No. 4.

The analytical results for the soil samples collected from the final floor beneath the former pump island area is presented compared to applicable MOE Table 3 standards in Table II. As indicated, all results satisfied the MOE Table 3 standards. The sample locations are presented on Drawings No. 4.

The analytical results for the soil samples collected from the final walls of the UST excavation are presented and compared to applicable MOE Table 3 standards in Table III. As indicated, all results

satisfied the MOE Table 3 standards, with the exception of EX1-SW1-4.5M, EX1-WW7-3.0M, EX2-NW3-3.0M and EX2-NW4-3.0M. The sample locations are presented on Drawings No. 5.

The analytical results for the soil samples collected from the base of the test pits (i.e., samples collected from below the base of the excavations) are presented and compared to applicable MOE Table 3 standards in Table IV. As indicated, all results satisfied the MOE Table 3 standards.

The analytical results for the soil samples collected from the segregated (non-impacted) soil stockpiles are presented and compared to applicable MOE Table 3 standards in Table V. As indicated, all results satisfied the MOE Table 3 standards.

The analytical results for the imported backfill are presented and compared to applicable MOE Table 3 standards in Tables VI and VII. As indicated, the results satisfied the MOE Table 3 standards.

The analytical results for soils removed from the Site, including the samples from the test pits that were excavated, are presented in Appendix D.

3.4 Quality Assurance/Quality Control Results

Field QA/QC samples collected during the sampling event consisted of nine soil duplicates (seven from the excavation walls, one from the piping and pump islands, and one from the test pits). All duplicates were analyzed for BTEX, PHC fractions F1 to F4, and lead. The QA/QC discussion is presented in Appendix E. In summary, the results of the QA/QC analyses were found to be generally acceptable. Where deviations were identified, the effects were determined to be negligible and are not believed to have materially affected the integrity of the data, nor the conclusions based on these results.

4.0 SUMMARY AND CONCLUSIONS

On May 8, 2009, BH1 to BH4 were abandoned by over-drilling in accordance with Ontario Regulation 903.

A total of two test pits (TP1 and TP2) were advanced in the proposed tank nest area on May 11, 2009 to further assess the ext of PHC-impacted soil.

Prior to the UST removal, Greyfield Construction Co. Ltd., under contract to Berkim, installed a shoring system consisting of piles and logging south of the existing USTs on the south property line to facilitate removal of the USTs and excavation of potentially impacted soil.

A total of seven USTs and associate distribution piping and pumps were removed and taken off-site for recycling in May, 2009. A total of approximately 1635 m^3 (3270 tonnes) of soil was excavated of which 1085 m^3 (2170 tonnes) was classified as non-hazardous (solid) waste and disposed of off-site. The remaining 550 m^3 (1100 tonnes) was reused as backfill along with 1085 tonnes of imported granular B material. The final excavation floor area was approximately 409 m^2 and the maximum depth was approximately 4.5 mbgs.

No groundwater or free product was encountered during the test pitting or excavation activities.

Soil samples were collected from the test pits, final floor and walls of the excavations, segregated (non-impacted) stockpiles, and imported backfill, and submitted for laboratory analysis for BTEX, PHC in the F1 to F4 fractions, and lead. All of the soil samples satisfied the MOE Table 3 (non-potable) site condition standards for commercial/industrial/ community land use with the exception of EX1-SW1-4.5M, EX1-WW7-3.0M, EX2-NW3-3.0M and EX2-NW4-3.0M.

A total of three 50 000 L new gas USTs and one 25 000 L new diesel UST, and new distribution piping and fuel pumps were installed at the Site.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc. for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective (insurers), agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and O'Connor Associates make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared

for specific application to this site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary. Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates. Nothing in this report is intended to constitute or provide a legal opinion.

Respectfully submitted,

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.

Nancy Haywood, A.Sc.T.

Gerry Parrott, P.Geo.

NEH:dsk

Distribution: (2) Imperial Oil Ltd. (w/cd)

W:\8000-999\8518#00\8518#01\8518T0109.R01(PIII)f.doc

TABLE I (Page 1 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
UST EXCAVATION - FLOOR
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS								STANDARDS
	EX1-F3-4.5M	EX1-F5-4.5M	EX1-F8-4.0M	EX1-F11-4.0M	EX1-F15-4.0M	EX1-F17-4.0M	EX1-F19-4.5M	EX1-F23-4.0M	TABLE 3[a]
Depth (m)	4.5	4.5	4.0	4.0	4.0	4.0	4.5	4.0	
Date Sampled	2009/05/26	2009/05/26	2009/05/25	2009/05/25	2009/05/25	2009/05/25	2009/06/02	2009/06/01	
Soil Vapour Concentration (ppm or % LEL)	265	220	110	85	15	10	55	500	NV
Moisture Content (%)	33	32	17	16	19	31	26	27	NV
Benzene	2.6	<0.02	<0.02	<0.02	<0.02	<0.02	0.28	2.1	25
Toluene	12	<0.02	<0.02	<0.02	<0.02	<0.02	2.4	10	150
Ethylbenzene	3.4	2.8	<0.02	<0.02	<0.02	<0.02	1.7	1.8	1000
m,p-Xylenes	18	15	<0.04	<0.04	<0.04	<0.04	8.5	6.8	NV
o-Xylene	6.9	0.38	<0.02	<0.02	<0.02	<0.02	2.6	2.3	NV
Total Xylenes	25	15	<0.04	<0.04	<0.04	<0.04	11	9	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	25	30	<10	<10	<10	<10	23	19	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	25	<10	<10	<10	<10	<10	20	18	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	<10	33	<10	12	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	<10	<10	6600
Lead	12	9	15	14	12	11	<5	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NV - No Value

O'CONNOR ASSOCIATES

TABLE I (Page 2 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
UST EXCAVATION - FLOOR
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS						STANDARDS
	EX1-F26-4.0M	EX1-F27-4.0M	EX2-F2-4.1M	EX2-F3-4.1M	EX2-F4-4.1M	EX2-F5-4.1M	TABLE 3[a]
Depth (m)	4.0	4.0	4.1	4.1	4.1	4.1	
Date Sampled	2009/06/01	2009/06/10	2009/06/03	2009/06/03	2009/06/04	2009/06/05	
Soil Vapour Concentration (ppm or % LEL)	290	130	5%	330	250	180	NV
Moisture Content (%)	36	27	29	30	34	35	NV
Benzene	5.7	1.1	6.4	6.9	1	0.76	25
Toluene	15	0.8	18	24	0.08	0.3	150
Ethylbenzene	3	2	2.0	2.4	1.6	2.5	1000
m,p-Xylenes	11	5.4	8	9.8	6.0	3.7	NV
o-Xylene	3.9	0.76	3.4	4.2	2.7	0.59	NV
Total Xylenes	15	6.2	11	14	8.7	4.3	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	30	28	14	29	130	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	18	14	<10	<10	230	15	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	11	<10	<10	150	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	6600
Lead	6	6	11	6	7	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NV - No Value

TABLE II (Page 1 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
PUMP ISLAND AREA - FLOOR
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS								STANDARDS
	PAD1-F3-0.3M	PAD2-F5-0.3M	PAD3-F2-0.3M	QA2	PAD3-F5-0.3M	PAD4-F2-0.3M	PAD4-F4-0.3M	PAD5-F5-0.3M	
				Duplicate-PAD3-F2-0.3M					TABLE 3[a]
Depth (m)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Date Sampled	2009/05/14	2009/05/14	2009/05/14	2009/05/14	2009/05/20	2009/05/20	2009/05/20	2009/05/20	
Soil Vapour Concentration (ppm or % LEL)	5	5	10	-	10	5	5	5	NV
Moisture Content (%)	9.1	7.2	14	9.0	7.6	8.1	8.9	9.3	NV
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	25
Toluene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	150
Ethylbenzene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1000
m,p-Xylenes	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04	<0.04	NV
o-Xylene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NV
Total Xylenes	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04	<0.04	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	<10	<10	<10	<10	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	<10	<10	<10	<10	<10	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	<10	12	55	38	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	<10	<10	6600
Lead	6	8	6	<5	15	16	21	10	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
- - Not available
NV - No Value

TABLE II (Page 2 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
PUMP ISLAND AREA - FLOOR
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS						STANDARDS
	DISPENSER1-F1.0M	DISPENSER 2 - F0.5M	DISPENSER 3 - F0.5M	TRENCH1 - F2 - 0.5M	TRENCH1 - F7 - 0.5M	TRENCH2-F1-0.5M	TABLE 3[a]
Depth (m)	1.0	0.5	0.5	0.5	0.5		
Date Sampled	2009/06/10	2009/05/21	2009/05/26	2009/05/21	2009/05/21	2009/06/10	
Soil Vapour Concentration (ppm or % LEL)	210	10	60	55	25	15	NV
Moisture Content (%)	30	5.5	4.7	8.1	7.8	20	NV
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	25
Toluene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	150
Ethylbenzene	0.06	0.03	<0.02	<0.02	<0.02	<0.02	1000
m,p-Xylenes	2.6	<0.04	<0.04	<0.04	<0.04	<0.04	NV
o-Xylene	4.3	<0.02	<0.02	<0.02	<0.02	<0.02	NV
Total Xylenes	6.9	<0.04	<0.04	<0.04	<0.04	<0.04	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	160	<10	<10	<10	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	40	180	45	<10	<10	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	46	350	410	<10	<10	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	6600
Lead	<5	33	52	10	6	15	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
- - Not available
NV - No Value

O'CONNOR ASSOCIATES

TABLE III (Page 1 of 3)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
UST EXCAVATION - WALLS
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS												STANDARDS
	EX1-EW1-4.0M	EX1-EW2-4.0M	QA4	EX1-EW3-4.0M	EX1-SW1-4.5M	EX1-SW2-4.0M	EX1-SW3-4.5M	QA3	EX1-SW4-4.5M	EX1-SW5-3.0M	EX1-SW6-4.0M	EX1-SW7-4.0M	
			Duplicate-EX1-EW2-4.0M					Duplicate-EX1-SW3-4.5M					TABLE 3[a]
Depth (m)	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5	4.5	3.0	4.0	4.0	
Date Sampled	2009/05/27	2009/05/27	2009/05/27	2009/05/27	2009/05/20	2009/05/20	2009/05/21	2009/05/21	2009/05/21	2009/05/20	2009/05/20	2009/05/28	
Soil Vapour Concentration (ppm or % LEL)	20	35	-	25	>100%	20%	30	-	25	55	100	3%	NV
Moisture Content (%)	22	21	19	18	15	16	16	14	16	29	27	36	NV
Benzene	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.1	25
Toluene	<0.02	<0.02	<0.02	<0.02	28	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	11	150
Ethylbenzene	<0.02	<0.02	<0.02	<0.02	39	0.27	0.05	<0.02	<0.02	<0.02	<0.02	6.5	1000
m,p-Xylenes	<0.04	<0.04	<0.04	<0.04	170	1.0	0.07	<0.04	<0.04	<0.04	0.06	33	NV
o-Xylene	<0.02	<0.02	<0.02	<0.02	53	0.28	<0.02	<0.02	<0.02	<0.02	<0.02	15	NV
Total Xylenes	<0.04	<0.04	<0.04	<0.04	**230**	1.3	0.07	<0.04	<0.04	<0.04	0.06	47	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	<10	<10	**1600**	27	<10	<10	<10	<10	<10	120	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	<10	<10	290	<10	<10	210	<10	<10	<10	52	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	<10	23	<10	<10	20	<10	<10	<10	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	6600
Lead	6	6	7	7	9	11	7	7	5	11	9	12	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
- - Not available
NV - No Value
BOLD - Exceeds selected criterion.

TABLE III (Page 2 of 3)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
UST EXCAVATION - WALLS
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS											STANDARDS
	EX1-WW1-3.0M	EX1-WW2-3.0M	EX1-WW3-3.0M	QA5	EX1-WW4-3.0M	EX1-WW5-3.0M	EX1-WW7-3.0M	QA9	EX1-WW8-3.0M	EX1-NW1-4.0M	EX1-NW2-3.0M	
			Duplicate-EX1-WW3-3.0M					Duplicate-EX1-WW7-3.0M				TABLE 3[a]
Depth (m)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	
Date Sampled	2009/05/28	2009/05/28	2009/05/29	2009/05/29	2009/05/28	2009/06/01	2009/06/10	2009/06/10	2009/06/10	2009/06/01	2009/06/01	
Soil Vapour Concentration (ppm or % LEL)	5%	40%	15%	-	45%	6%	80%	-	40%	20%	20%	NV
Moisture Content (%)	6.4	20	35	29	29	20	14	14	19	21	9.3	NV
Benzene	<0.2	1.1	2.3	1.8	2.3	0.83	3.4	1.4	0.11	0.72	<0.02	25
Toluene	0.9	7.1	11	8.2	16	1.6	35	15	0.3	7.0	<0.02	150
Ethylbenzene	3.2	7.0	9.7	6.6	18	0.77	35	28	0.79	1.1	0.04	1000
m,p-Xylenes	56	23	33	23	46	3.1	110	100	2.7	3.8	0.18	NV
o-Xylene	29	9.2	13	9.3	24	1.0	35	27	0.84	1.4	0.11	NV
Total Xylenes	85	33	46	32	70	4.1	150	130	3.6	5.2	0.29	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	500	110	97	59	310	10	**760**	**730**	20	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	1100	28	55	14	62	17	330	290	10	<10	36	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	86	<10	12	<10	<10	<10	41	61	<10	<10	24	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	6600
Lead	15	8	8	6	6	<5	<5	<5	<5	<5	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
- - Not available
NV - No Value
BOLD - Exceeds selected criterion.

TABLE III (Page 3 of 3)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
UST EXCAVATION - WALLS
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS											STANDARDS
	EX2-NW1-3.0M	EX2-NW2-4.0M	QA7	EX2-NW3-3.0M	EX2-NW4-3.0M	EX2-NW5-3.0M	EX2-EW1-4.0M	EX2-EW2-4.0M	EX2-EW3-3.0M	QA8	EX2-EW4-4.0M	
			Duplicate-EX2-NW2-4.0M							Duplicate-EX2-EW3-3.0M		TABLE 3[a]
Depth (m)	3.0	4.0	4.0	3.0	3.0	3.0	4.0	4.0	3.0	3.0	4.0	
Date Sampled	2009/06/03	2009/06/03	2009/06/03	2009/06/03	2009/06/04	2009/06/04	2009/06/05	2009/06/05	2009/06/05	2009/06/05	2009/06/05	
Soil Vapour Concentration (ppm or % LEL)	7%	20%	-	65%	40%	30%	300	50	100	-	40	NV
Moisture Content (%)	14	30	34	27	22	18	31	34	18	18	32	NV
Benzene	<0.02	4.4	3.6	2.2	1.6	0.37	0.92	1.2	<0.02	<0.02	0.2	25
Toluene	0.05	10	6.3	0.3	1.5	0.17	0.45	1.8	<0.02	<0.02	0.04	150
Ethylbenzene	0.13	3.4	1.5	11	7.7	4.0	1.1	2.7	<0.02	<0.02	1.8	1000
m,p-Xylenes	0.56	13	5.6	43	22	5.9	3.6	9	<0.04	<0.04	1.9	NV
o-Xylene	0.18	5.2	2.4	1.7	12	0.53	1.6	3.5	<0.02	<0.02	0.16	NV
Total Xylenes	0.73	18	7.9	44	34	6.4	5.3	13	<0.04	<0.04	2.1	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	78	35	600	**1200**	200	63	13	<10	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	260	160	**2800**	**4600**	300	450	22	<10	<10	19	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	130	96	1400	2200	100	210	<10	<10	<10	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	6600
Lead	6	10	10	7	<5	<5	<5	<5	<5	<5	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
- - Not available
NV - No Value
BOLD - Exceeds selected criterion.

O'CONNOR ASSOCIATES

TABLE IV

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
BASE OF TEST PITS
(µg/g or ppm, dry weight)

PARAMETER			STANDARDS
	TP1-4.1M	TP2-4.0M	TABLE 3[a]
Depth (m)	4.1	4.0	
Date Sampled	2009/05/11	2009/05/11	
Soil Vapour Concentration (ppm or % LEL)	350	175	NV
Moisture Content (%)	29	33	NV
Benzene	2.9	0.64	25
Toluene	0.97	2.1	150
Ethylbenzene	2.7	0.57	1000
m,p-Xylenes	10	2.1	NV
o-Xylene	3.4	0.89	NV
Total Xylenes	13	3	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	100	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	230	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	120	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	6600
Lead	8	11	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004). Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NV - No Value

O'CONNOR ASSOCIATES

TABLE V (Page 1 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
SEGREGATED (NON-IMPACTED)
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS							STANDARDS
	EX1-F8-4.5M	EX1-F8-4.7M	EX1-F8-4.8M	EX1-F8-5.0M	SP-1	SP-2	SP-3	
Date Sampled	4.5 2009/05/27	4.7 2009/05/27	4.8 2009/05/27	8 2009/05/27	2009/05/19	2009/05/19	2009/05/25	TABLE 3[a]
Soil Vapour Concentration (ppm or % LEL)	10%	90	100	45	ND	5	50	NV
Moisture Content (%)	38	31	3.7	3	3.1	7.3	3.1	NV
Benzene	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	25
Toluene	0.09	0.22	<0.02	<0.02	0.06	<0.02	0.12	150
Ethylbenzene	3.7	2.5	0.04	0.03	<0.02	<0.02	0.04	1000
m,p-Xylenes	5.7	4.4	0.05	0.05	<0.04	<0.04	0.12	NV
o-Xylene	0.12	0.21	<0.02	<0.02	0.03	<0.02	0.08	NV
Total Xylenes	5.8	4.6	0.05	0.05	<0.04	<0.04	0.19	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	45	28	<10	<10	17	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	27	<10	<10	<10	<10	<10	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	<10	31	<10	100	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	64	<10	320	6600
Gravimetric Petroleum Hydrocarbons F4 (>C34)	-	-	-	-	-	-	1000	6600
Lead	7	7	5	<5	10	7	13	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
- - Not available
NV - No Value
ND - Parameter not detected

TABLE V (Page 2 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
SEGREGATED (NON-IMPACTED)
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS								STANDARDS
	SP-4	SP-6	SP-8	SP-9	SP-10	SP-12	SP-14	SP-15	
Date Sampled	2009/05/25	2009/05/26	2009/05/28	2009/05/29	2009/06/01	2009/06/02	2009/06/04	2009/06/05	TABLE 3[a]
Soil Vapour Concentration (ppm or % LEL)	5	100	20	400	35	170	>100%	80	NV
Moisture Content (%)	7.1	5.7	7.1	9.8	12	13	16	5.7	NV
Benzene	<0.02	<0.02	<0.02	0.25	<0.02	<0.02	0.14	<0.02	25
Toluene	<0.02	0.86	<0.02	6.6	0.67	<0.02	0.18	0.07	150
Ethylbenzene	<0.02	0.76	<0.02	2.4	0.29	0.03	0.24	0.04	1000
m,p-Xylenes	<0.04	3.9	0.06	11	1.3	0.32	0.92	0.24	NV
o-Xylene	<0.02	2.0	0.04	4.9	0.63	0.23	0.36	0.17	NV
Total Xylenes	<0.04	5.9	0.11	16	1.9	0.55	1.3	0.41	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	30	<10	55	<10	16	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	61	<10	120	25	110	150	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	14	<10	28	16	88	72	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	17	<10	<10	6600
Gravimetric Petroleum Hydrocarbons F4 (>C34)	-	-	-	-	-	-	-	-	6600
Lead	5	11	<5	12	10	5	<5	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
- - Not available
NV - No Value
ND - Parameter not detected

TABLE VI

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
IMPORTED BACKFILL
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS			STANDARDS
	BF-1	BF-2	BF-3	
Depth (m)				TABLE 3[a]
Date Sampled	2009/06/10	2009/06/11	2009/06/24	
Soil Vapour Concentration (ppm or % LEL)	5	ND	ND	NV
Moisture Content (%)	4.0	4.6	2.8	NV
Benzene	<0.02	<0.02	<0.02	25
Toluene	<0.02	0.07	0.09	150
Ethylbenzene	<0.02	<0.02	<0.02	1000
m,p-Xylenes	<0.04	0.06	0.09	NV
o-Xylene	<0.02	<0.02	0.03	NV
Total Xylenes	<0.04	0.06	0.12	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	15	<10	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	15	<10	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	6600
Lead	10	8	8	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004). Full depth generic site condition standards in a potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.

b - BTEX have been subtracted from the fraction.

c - Naphthalene has not been subtracted from the fraction.

d - PAHs have not been subtracted from the fraction.

ND - Parameter not detected.

NV -No Value

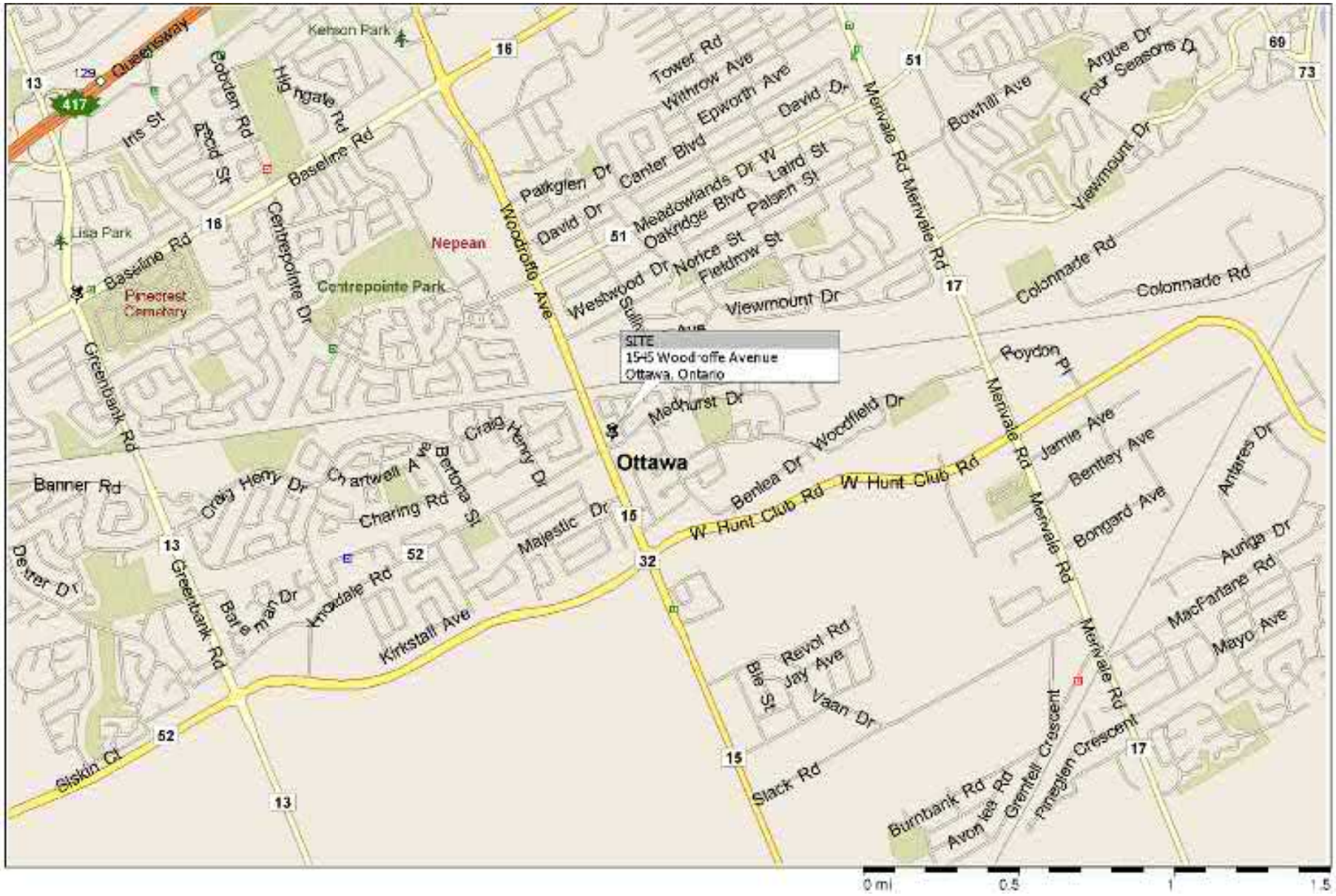
O'CONNOR ASSOCIATES

TABLE VII

SOIL ANALYTICAL RESULTS
INORGANIC PARAMETERS
IMPORTED BACKFILL
(µg/g dry weight, unless otherwise noted)

PARAMETER	SAMPLE LOCATIONS			STANDARDS
	BF-1	BF-2	BF-3	TABLE 3[a]
Date Sampled	2009/06/10	2009/06/11	2009/06/24	
Antimony	<0.2	<0.2	<0.2	44
Arsenic	1	1	2	40
Barium	170	160	96	2000
Beryllium	0.2	<0.2	<0.2	1.2
Cadmium	<0.1	<0.1	<0.1	12
Chromium	10	7	6	1000
Cobalt	5.0	3.7	3.6	100
Copper	11	13	11	300
Molybdenum	<0.5	<0.5	0.5	40
Nickel	8.9	7.4	6	200
Selenium	<0.5	<0.5	<0.5	10
Silver	<0.2	<0.2	<0.2	50
Thallium	0.17	0.19	0.12	32
Vanadium	6	<5	<5	250
Zinc	11	8	20	800

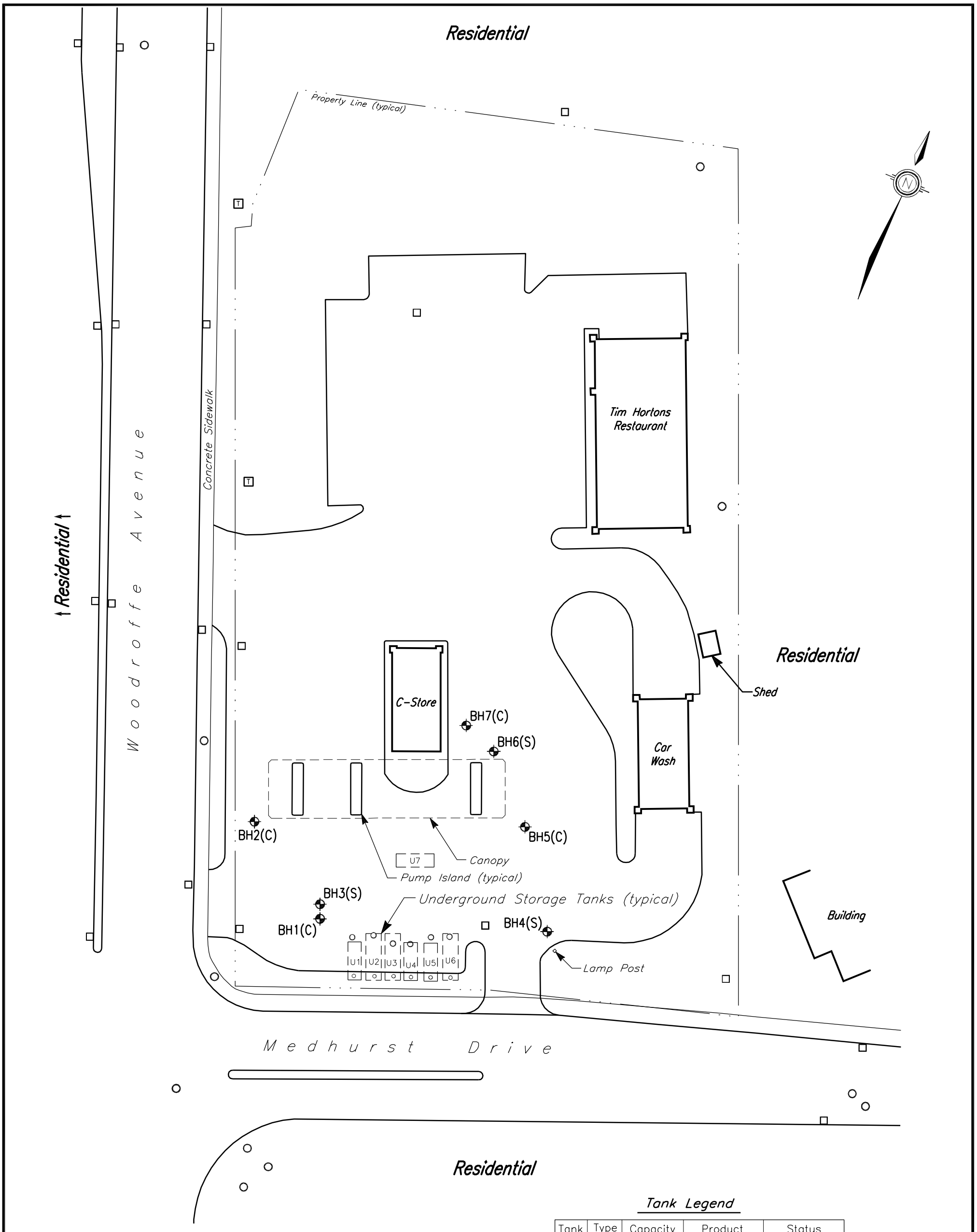
a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.



Site Location Map
1545 Woodroffe Avenue, Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8518T01	DATE: 2009/08/06
FILE NO.: 8518T015	DWG. NO.: 1



Tank Legend

Tank	Type	Capacity	Product	Status
U1	UST	13 600 L	Gasoline	Active
U2	UST	22 700 L	Gasoline	Active
U3	UST	22 700 L	Gasoline	Active
U4	UST	13 600 L	Diesel	Active
U5	UST	13 600 L	Gasoline	Active
U6	UST	22 700 L	Gasoline	Active
U7	UST	2 273 L	Furnace Oil	Active

Reference: Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

LEGEND

- Manhole
- Catch Basin
- Transformer (Pad Mounted)
- Borehole with Monitoring Well BH1 to BH7 by O'Connor 2008
  - (S) Screened in Sand
  - (C) Screened in Clay

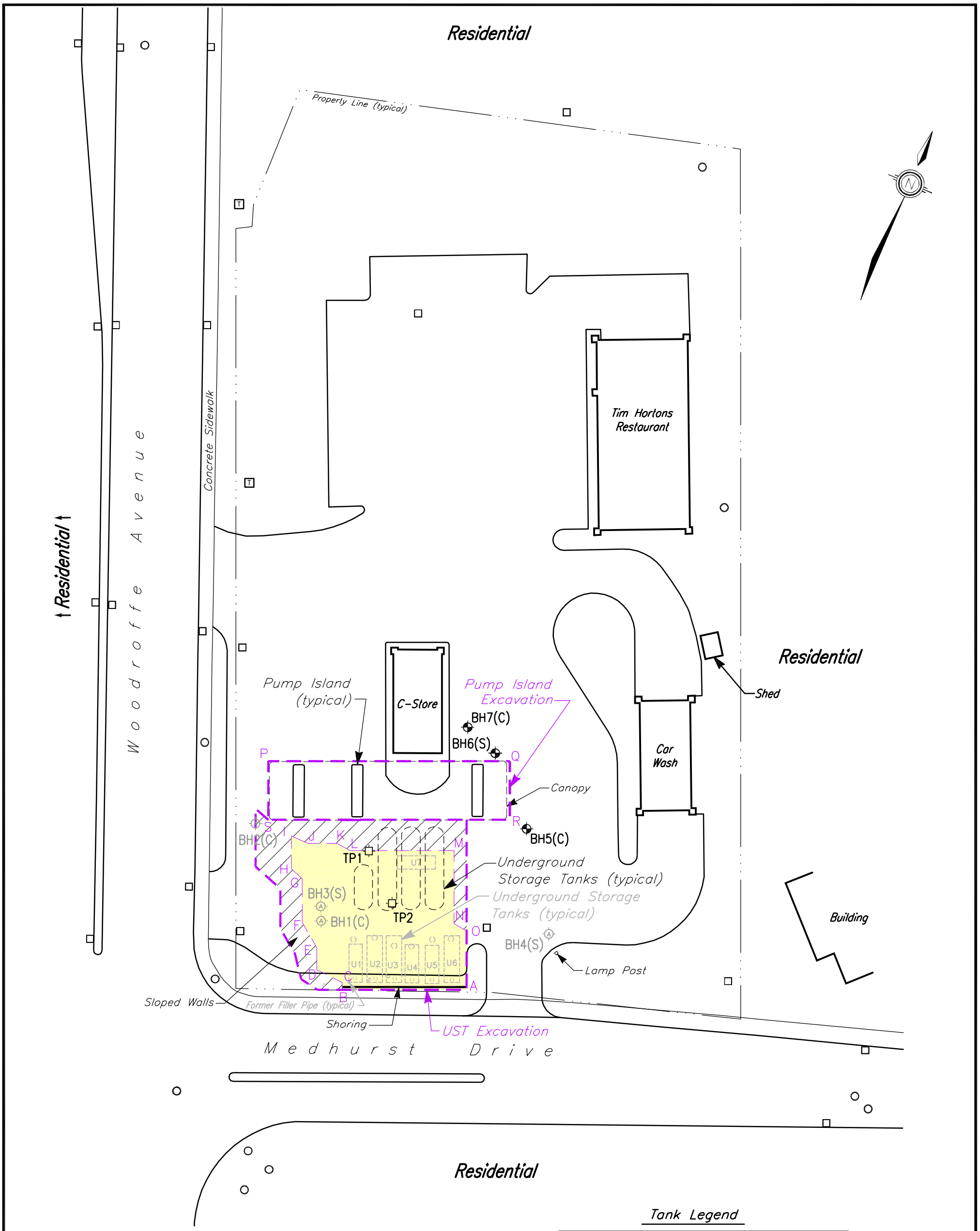
0 5 10 15 20 25m

Original Scale 1:500

Site Plan and Surrounding Land Use
1545 Woodroffe Avenue, Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8518T01	DATE: 2009/08/26
FILE NO.: 8518S013	DWG. NO.: 2



LEGEND

- Former Facility
- Manhole
- Catch Basin
- Transformer (Pad Mounted)
- Borehole with Monitoring Well BH1 to BH7 by O'Connor 2008
  - (S) Screened in Sand
  - (C) Screened in Clay
- Test Pit without Monitoring Well
- Borehole with Monitoring Well Abandoned

0 5 10 15 20 25m

Original Scale 1:500

Tank Legend

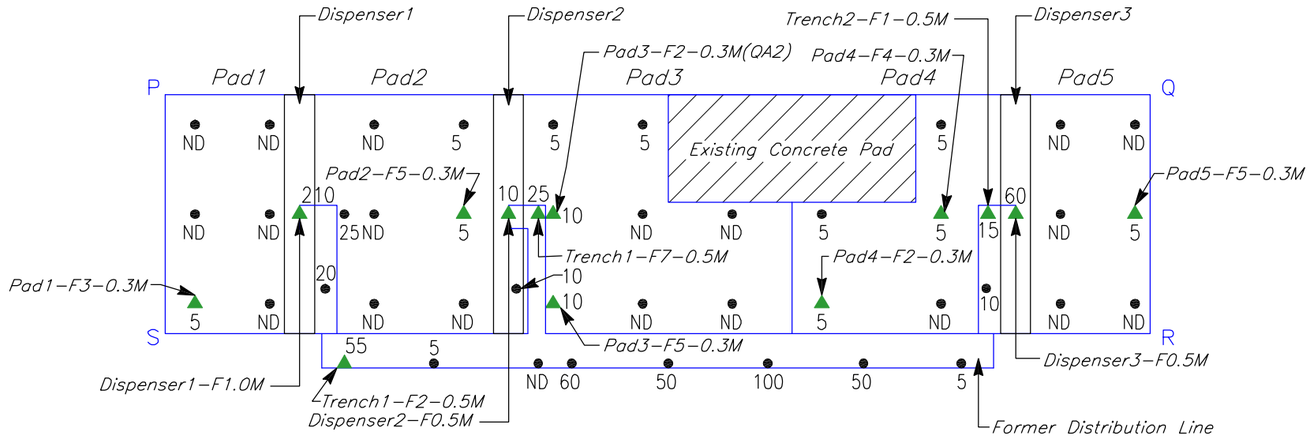
Tank	Type	Capacity	Product	Status
U1	UST	13 600 L	Gasoline	Removed
U2	UST	22 700 L	Gasoline	Removed
U3	UST	22 700 L	Gasoline	Removed
U4	UST	13 600 L	Diesel	Removed
U5	UST	13 600 L	Gasoline	Removed
U6	UST	22 700 L	Gasoline	Removed
U7	UST	2 273 L	Furnace Oil	Removed

Reference: Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

Site Plan and Limits of Excavation
1545 Woodroffe Avenue, Ottawa, Ontario

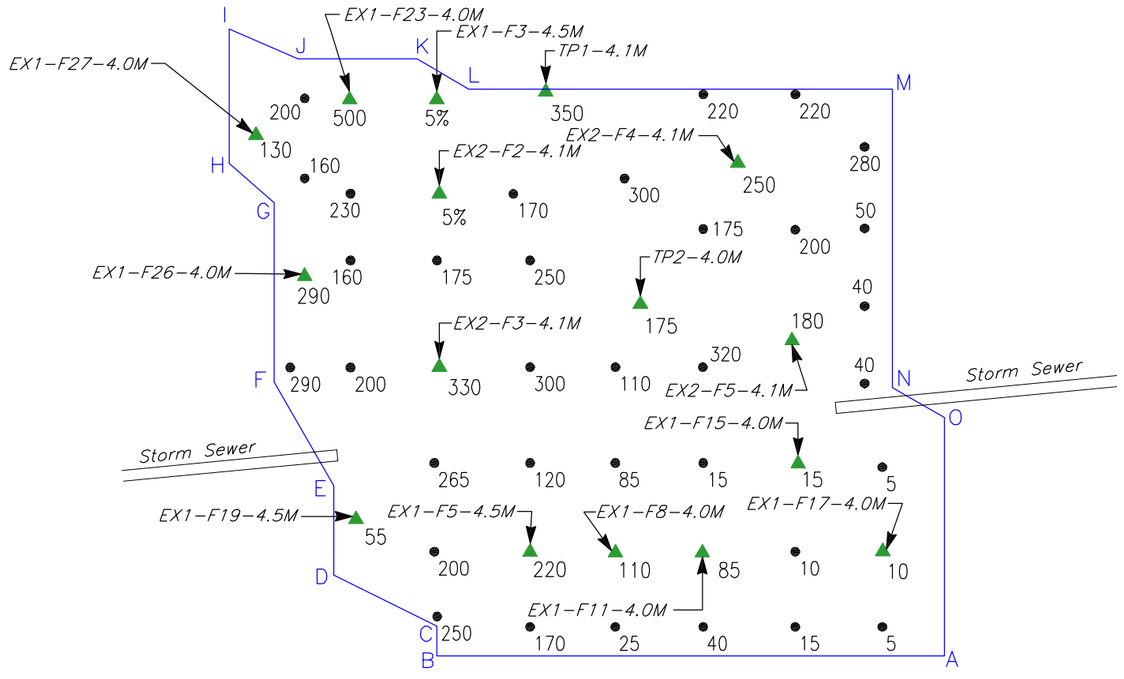
O'CONNOR ASSOCIATES

JOB NO.: 10-8518T01	DATE: 2009/08/27
FILE NO.: 8518S018	DWG. NO.: 3



Floor

Pump Island Excavation



Floor

UST Excavation

LEGEND

- ● Soil Sample Collected for Headspace Vapour Measurement
- ▲ Soil Sample Collected for Headspace Vapour Measurement and Submitted for Laboratory Analysis
- 50 Headspace Vapour Measurement (ppm)
- 5% Headspace Vapour Measurement (%LEL)

Analytical Results

- ▲ Location where results met referenced standard (shown in green)
- ▲ Location where one or more results exceeded referenced standard (shown in red)
- 1400 Result Exceeded Referenced Standard
- < Result Less Than Detection Limit
- ND Not Detected (<5ppm)

Criteria

SHOWN AS	PARAMETER	UNITS	MOE Table 3* Standard
B	Benzene	µg/L	25
T	Toluene	µg/L	150
E	Ethylbenzene	µg/L	1000
X	Total Xylenes	µg/L	210
F1	PHC (C6 - C10) - BTEX	µg/L	750
F2	PHC (>C10 - C16)	µg/L	150.0
F3	PHC (>C16 - C34)	µg/L	2500
F4	PHC (>C34 - C50+)	µg/L	6600
Pb	Lead	µg/L	120.0

* MOE Table 3 site condition standard
for industrial/commercial/community land use,
fine/medium textured soil

PHC Petroleum hydrocarbons

The vapour concentration data shown on this drawing have been determined from field headspace measurements of soil samples. Vapour concentrations were measured only at the specific sample locations on the indicated dates. Between the data points and beyond the excavation walls and base, vapour concentrations may vary from those indicated on this drawing. Vapour concentrations may also change with the passage of time or as a result of site activities.

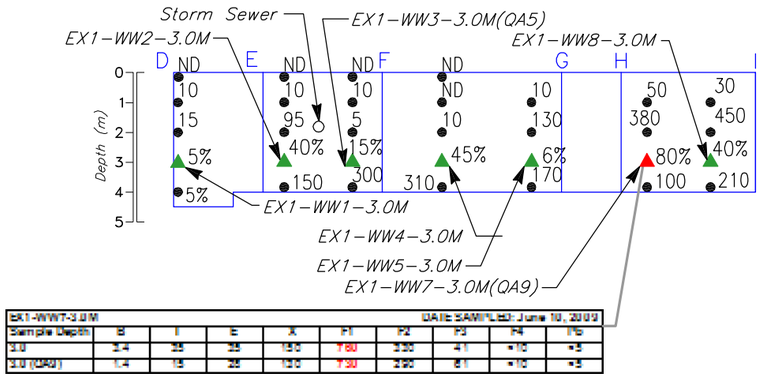
0 2 4 6 8 10m

Original Scale 1:200

Soil Vapour Concentrations on the Floor of the UST and Pump Island Excavations
2009/04/11-2009/06/24
1545 Woodroffe Avenue, Ottawa, Ontario

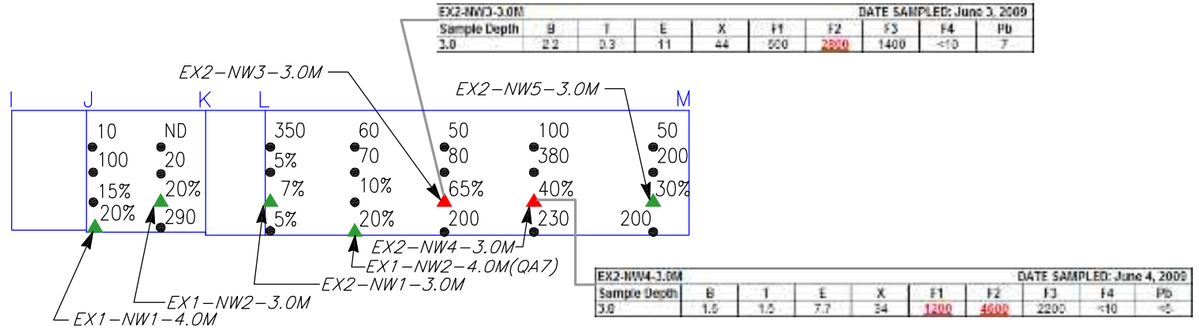
O'CONNOR ASSOCIATES

JOB NO.:	10-8518T01	DATE:	2009/08/27
FILE NO.:	8518E011	DWG. NO.:	4



EX1-WW7-3.0M									DATE SAMPLED: June 10, 2009
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.0	3.4	25	25	150	730	330	41	<10	<5
3.0 (QA9)	1.4	15	25	130	730	290	61	<10	<5

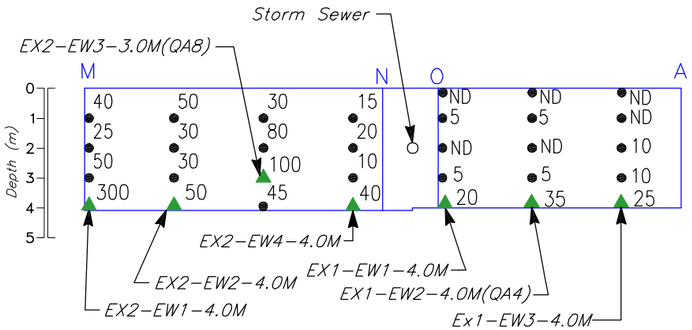
West Wall



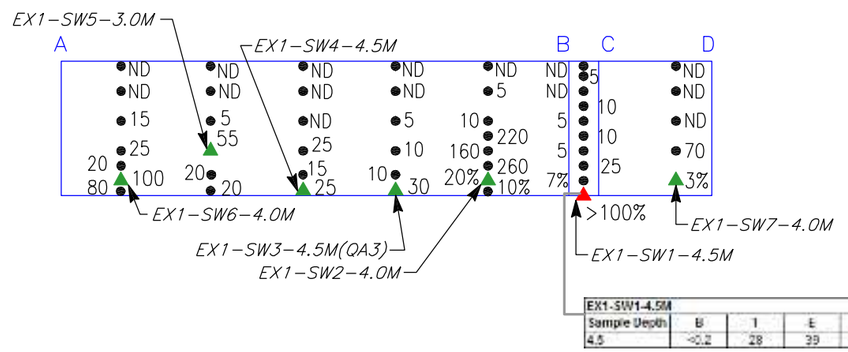
EX2-NW3-3.0M									DATE SAMPLED: June 3, 2009
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.0	2.2	0.3	11	44	500	2800	1400	<10	7

EX2-NW4-3.0M									DATE SAMPLED: June 4, 2009
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.0	1.5	1.5	7.7	34	1200	4600	2200	<10	<5

North Wall



East Wall



EX1-SW1-4.5M									DATE SAMPLED: May 20, 2009
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
4.5	<0.2	28	39	230	1000	290	23	<10	9

South Wall

LEGEND

- ● *Soil Sample Collected for Headspace Vapour Measurement*
- ▲ *Soil Sample Collected for Headspace Vapour Measurement and Submitted for Laboratory Analysis*
- 50 *Headspace Vapour Measurement (ppm)*
- 5% *Headspace Vapour Measurement (%LEL)*

Analytical Results

- ▲ *Location where results met referenced standard (shown in green)*
- ▲ *Location where one or more results exceeded referenced standard (shown in red)*
- 1400 *Result Exceeded Referenced Standard*
- < *Result Less Than Detection Limit*
- ND *Not Detected (<5ppm)*

Criteria

SHOWN AS	PARAMETER	UNITS	MOE Table 3* Standard
B	Benzene	ug/L	25
T	Toluene	ug/L	150
E	Ethylbenzene	ug/L	1000
X	Total Xylenes	ug/L	310
F1	PHC (C6 - C10) - BTEX	ug/L	660
F2	PHC (>C10 - C16)	ug/L	1500
F3	PHC (>C16 - C34)	ug/L	2600
F4	PHC (>C34 - C50+)	ug/L	5600
Pb	Lead	ug/L	1000

* MOE Table 3 site condition standard industrial/commercial/community landuse, fine/medium textured soil

F1-F4 Petroleum hydrocarbons

The vapour concentration data shown on this drawing have been determined from field headspace measurements of soil samples. Vapour concentrations were measured only at the specific sample locations on the indicated dates. Between the data points and beyond the excavation walls and base, vapour concentrations may vary from those indicated on this drawing. Vapour concentrations may also change with the passage of time or as a result of site activities.

0 2 4 6 8 10m

Original Scale 1:200

Soil Vapour Concentrations on the Walls of the UST Excavation
2009/04/11-2009/06/24
1545 Woodroffe Avenue, Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8518T01	DATE: 2009/08/26
FILE NO.: 8518E014	DWG. NO.: 5

APPENDIX A

WELL ABANDONMENT RECORD

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*: 54 M.W. abandonments under Tag A024590 (3 M.W.s) and one M.W. under Tag A024591

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 2

Master Well Owner's and Land Owner's Information

First Name	Last Name	E-mail Address
Imperial Oil Ltd		

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
10 Wynford Drive	Toronto	ON	M3C 1K5	416 444 1111

Location and Construction of the Master Well in the Cluster

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
1545 Woodroffe Ave			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Nepean	Ontario	

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation:
NAD 83	18	441107	4920351	Garmin	Etrex	☐ Undifferentiated ☐ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
	4 monitoring well abandonments				
	Remove casing / screen; backfill				
	boreholes from 5.9 m below surface				
	with silica sand / bentonite to surface				
	as per O.Reg 903 MOE Reg '09				

Hole Details

Depth (Metres) From	Depth (Metres) To	Diameter (Centimetres)
0	5.9	20

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, specify
☐ Domestic ☐ Commercial ☐ Dewatering
☐ Livestock ☐ Municipal ☐ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☐ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☐ Other, specify
☐ Rotary (Air) ☐ Driving

Status of Well

☐ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, specify
☐ Alteration (Construction) ☒ Abandoned, other, specify

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	Depth (Metres) To

No Casing and Screen Used

Open Hole ☐ Yes ☒ No

Static Water Level Test

Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☐ Plastic

Outside Diameter (Centimetres)	Slot No.

Water Details

Water found at Depth	Kind of Water
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth	Kind of Water
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth	Kind of Water
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected ☐ Yes ☒ No If no, provide reason

Date Master Well Completed (yyyy/mm/dd): 2009/05/08

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	Depth Set at (Metres) To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0	5.9	Bentonite	1.6 kg

Cluster Information *(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)*

Total Wells in Cluster	Please indicate Number of Cluster Well Information Log Sheets Submitted
4	1
Total Wells on this Property	
4	

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.

☒ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

Signature of Technician/Contractor	Date (yyyy/mm/dd)
	2009/07/30

Master Well Owner's/Land Owner's consent to use Cluster Form

Signature	Date (yyyy/mm/dd)
	2009/08/24

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No
George Downing Estate Drilling	1814

Business Address (Street No./Name, number, RR)	Municipality
410 Rue Principale	Granville sur le Rouge

Province	Postal Code	Business E-mail Address
Qc	J0V 1B0	not known

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
819 242 6409	Downing, Bruce

Well Technician's Licence No.	Signature of Technician	Date Submitted (yyyy/mm/dd)
2173		2009/07/30

Ministry Use Only

Audit No	Well Contractor No
M 04497	
Date Received (yyyy/mm/dd)	Date of Inspection (yyyy/mm/dd)

Remarks

1992 (11/2006)

Well Owner's Copy

© Queen's Printer for Ontario, 2006

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)*
4 M.W. Abandonments under Tag A174590 (3 M.W.s remaining)

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Property Owner's Information

First Name	Last Name	Mailing Address (Street No./Name, RR)	Municipality
Imperial Oil Ltd		90 Wynford Drive	Toronto
Province	**Postal Code**	**E-mail Address**	**Telephone No. (inc. area code)**
ON	M3C 1K5		416 444 1731 5141

Consent

Property Owner's Consent to use cluster form

Signature: [signature] Date (yyyy/mm/dd): 2009/08/21

Consent to release additional information to the Director upon request

Signature of Technician/Contractor: [signature] Date (yyyy/mm/dd): 2009/12/30

Cluster Well Information

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
1545 Woodroffe Ave				
City/Town/Village	**Province**	**Postal Code**	**GPS Unit Make**	**Model**
Ottawa	Ontario			

Unit Mode of Operation: ☐ Differentiated, specify ☐ Undifferentiated ☐ Averaged

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
MW #2	18	449108	5026243	4.3	20								Bentonite		2009/12/08
MW #3	18	449109	5026244	6.1	"								"		"
MW #4	18	449095	5026236	6.1	"								"		"

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
Groundwater Environmental Drilling Ltd	4th Line Pineridge Crescent	Ste. Anne de Bellevue	QC
Postal Code	**Business Telephone No. (inc. area code)**	**Well Contractor's Licence No.**	**Business E-mail Address**
H9X 1B0	514 457 2161	1814	dawn@groundwaterenvironmental.net
Name of Well Technician (First Name, Last Name)	**Well Technician's Licence No.**	**Date Submitted (yyyy/mm/dd)**	**Signature of Technician**
Dave Downing	7111	2009/12/30	[signature]

Date 1st Well in Cluster Constructed (yyyy/mm/dd): 2009/12/08 Date Last Well in Cluster Constructed (yyyy/mm/dd): 2009/12/08

Ministry Use Only

Date Received (yyyy/mm/dd)	Date Inspected (yyyy/mm/dd)
Audit No C 05205	Remarks

© Queen's Printer for Ontario, 2006

1991 (11/2006)

Well Owner's Copy

APPENDIX B

TEST PIT LOGS

TABLE A-1 (Page 1 of 1)

TEST PIT LOGS
2009/05/11

Test Pit No.	Depth (m)	Description	Sample		
			Depth (m)	Headspace Vapour Concentration (ppm or % LEL) Gastech ME Or RKI EAGLE	Laboratory Sample (BTEX, PHC F1-F4 and Lead)
TP1	0	ASPHALT	0 – 0.05	ND	
	0.03	SAND (Fill), light olive brown, medium to fine grained, some gravel damp	0.1 – 0.5	ND	
			0.6 - 1.0	ND	
	1.0	SAND, dark gray, fine grained, trace silt, trace gravel, damp	1.1 – 1.5	ND	
	2.0	ORGANIC SILT, black, wood chips, moist, petroleum odour	1.6 - 2.0	10%	ü TP1-2.0m
			2.1 – 2.5	15%	ü TP1-2.5m
	2.1	SAND, gray, fine grained, trace silt, moist, petroleum odour	2.6 - 3.0	100%	
	3.4	SILT, gray, some clay, trace sand, wet, petroleum odour	3.1 – 3.5	100%	ü TP1-3.5m QA1
			3.6 - 4.0	320P	
	3.8	CLAY and SILT, gray, wet, petroleum odour	4.0 - 4.1	350P	ü TP1-4.1m
	4.1	END OF HOLE			
TP2	0	ASPHALT	0 – 0.05	ND	
	0.03	SAND (Fill), dark brown, medium to fine grained, some gravel damp	0.1 – 0.5	ND	
			0.6 - 1.0	5%	ü TP2-1.0m
	1.0	SAND, dark gray, fine grained, trace silt, moist, petroleum odour	1.1 – 1.5	170P	
	1.8	ORGANIC SILT, black, wood chips, moist, petroleum odour	1.6 - 2.0	30%	ü TP2-2.0m
			2.1 – 2.5	230P	
	2.1	SILT, gray, some clay, moist, petroleum odour	2.6 - 3.0	80%	ü TP2-3.0m
	3.0	SAND, dark gray, fine grained, moist, petroleum odour -black streaks	3.1 – 3.5	200P	
			3.6 - 4.0	175P	ü TP2-4.0m
	3.5	CLAY and SILT, gray, wet, petroleum odour -black streaks	4.1 - 4.5	160P	
	4.5	END OF HOLE			

ND - Not Detected

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30055

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A955516
Received: 2009/05/13, 09:52

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30055

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A955516
Received: 2009/05/13, 09:52

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

Encryption Key

Ema Gitej

21 May 2009 11:21:16 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A955516
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CL9335		CL9336		
Sampling Date		2009/05/11 13:00		2009/05/11 13:15		
COC Number		30055		30055		
	Units	**TP2-1.0M**	**RDL**	**TP2-2.0M**	**RDL**	**QC Batch**
Moisture	%	18	0.2	58	0.2	1817290
Benzene	ug/g	0.07	0.02	29	0.4	1818357
Toluene	ug/g	0.92	0.02	2.8	0.4	1818357
Ethylbenzene	ug/g	0.43	0.02	62	0.4	1818357
o-Xylene	ug/g	4.0	0.02	59	0.4	1818357
p+m-Xylene	ug/g	7.2	0.04	210	0.8	1818357
Total Xylenes	ug/g	11	0.04	270	0.8	1818357
F1 (C6-C10)	ug/g	69	10	1200	200	1818357
F1 (C6-C10) - BTEX	ug/g	57	10	800	200	1818357
F2 (C10-C16 Hydrocarbons)	ug/g	220	10	130	20	1818887
F3 (C16-C34 Hydrocarbons)	ug/g	19	10	220	20	1818887
F4 (C34-C50 Hydrocarbons)	ug/g	14	10	340	20	1818887
Reached Baseline at C50	ug/g	Yes		Yes		1818887
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	95		107		1818357
o-Terphenyl	%	78		82		1818887
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	106		102		1818357
4-Bromofluorobenzene	%	97		98		1818357
D4-1,2-Dichloroethane	%	99		103		1818357

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955516
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CL9337	CL9338		
Sampling Date		2009/05/11 13:30	2009/05/11 13:45		
COC Number		30055	30055		
	Units	**TP2-3.0M**	**TP2-4.0M**	**RDL**	**QC Batch**
Moisture	%	21	33	0.2	1817290
Benzene	ug/g	1.7	0.64	0.02	1818357
Toluene	ug/g	7.2	2.1	0.02	1818357
Ethylbenzene	ug/g	3.6	0.57	0.02	1818357
o-Xylene	ug/g	5.6	0.89	0.02	1818357
p+m-Xylene	ug/g	14	2.1	0.04	1818357
Total Xylenes	ug/g	19	3.0	0.04	1818357
F1 (C6-C10)	ug/g	92	10	10	1818357
F1 (C6-C10) - BTEX	ug/g	61	<10	10	1818357
F2 (C10-C16 Hydrocarbons)	ug/g	62	<10	10	1818887
F3 (C16-C34 Hydrocarbons)	ug/g	11	<10	10	1818887
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1818887
Reached Baseline at C50	ug/g	Yes	Yes		1818887
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	95	91		1818357
o-Terphenyl	%	79	82		1818887
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	107	104		1818357
4-Bromofluorobenzene	%	97	97		1818357
D4-1,2-Dichloroethane	%	99	99		1818357

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955516
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CL9335	CL9336	CL9337		
Sampling Date		2009/05/11 13:00	2009/05/11 13:15	2009/05/11 13:30		
COC Number		30055	30055	30055		
	Units	**TP2-1.0M**	**TP2-2.0M**	**TP2-3.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	5	7	6	5	1818554

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CL9338		
Sampling Date		2009/05/11 13:45		
COC Number		30055		
	Units	**TP2-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	11	5	1818554

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955516
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CL9335 **Collected** 2009/05/11
Sample ID TP2-1.0M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818357	2009/05/13	2009/05/15	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1818887	2009/05/15	2009/05/16	NCI
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam ID CL9336 **Collected** 2009/05/11
Sample ID TP2-2.0M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818357	2009/05/13	2009/05/16	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1818887	2009/05/15	2009/05/16	NCI
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam ID CL9337 **Collected** 2009/05/11
Sample ID TP2-3.0M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818357	2009/05/13	2009/05/15	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1818887	2009/05/15	2009/05/16	NCI
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam ID CL9338 **Collected** 2009/05/11
Sample ID TP2-4.0M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818357	2009/05/13	2009/05/15	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1818887	2009/05/15	2009/05/16	NCI
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955516
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample CL9336-01: F1-BTEX Analysis: Detection limits were adjusted for high moisture content .

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A955516

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1818357	SHK	Method Blank	1,4-Difluorobenzene	2009/05/15		104	%	60 - 140
			4-Bromofluorobenzene	2009/05/15		98	%	60 - 140
			D10-Ethylbenzene	2009/05/15		89	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/15		98	%	60 - 140
			Benzene	2009/05/15	<0.02		ug/g	
			Toluene	2009/05/15	<0.02		ug/g	
			Ethylbenzene	2009/05/15	<0.02		ug/g	
			o-Xylene	2009/05/15	<0.02		ug/g	
			p+m-Xylene	2009/05/15	<0.04		ug/g	
			Total Xylenes	2009/05/15	<0.04		ug/g	
			F1 (C6-C10)	2009/05/15	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/15	<10		ug/g	
1818554	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/15	<5		ug/g	
1818887	NCI	Method Blank	o-Terphenyl	2009/05/16		80	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/16	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/16	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/16	<10		ug/g	
1818357	SHK	LCS	1,4-Difluorobenzene	2009/05/15		104	%	60 - 140
			4-Bromofluorobenzene	2009/05/15		99	%	60 - 140
			D10-Ethylbenzene	2009/05/15		88	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/15		98	%	60 - 140
			Benzene	2009/05/15		77	%	60 - 140
			Toluene	2009/05/15		75	%	60 - 140
			Ethylbenzene	2009/05/15		83	%	60 - 140
			o-Xylene	2009/05/15		85	%	60 - 140
			p+m-Xylene	2009/05/15		80	%	60 - 140
			F1 (C6-C10)	2009/05/15		81	%	60 - 140
1818887	NCI	LCS	o-Terphenyl	2009/05/20		74	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/20		82	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/20		82	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/20		82	%	60 - 130
1818554	APT	SRM	Acid Extractable Lead (Pb)	2009/05/15		94	%	75 - 125

QC Standard = Quality Control Standard

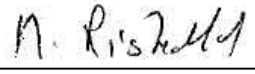
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

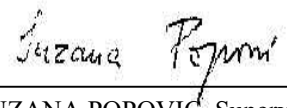
Maxxam Job #: A955516

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 30055

COMPANY NAME: O'Connor Associates (OA)
PH #: 613 742 1781
FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9
CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): Pierre D'Angelo
PROJECT MANAGER: Nancy Haywood

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	TP2 - 1.0m	CL9335	S	3	09/05/11	1300	X	X	X					X										
2	TP2 - 2.0m	CL9336	S	3	09/05/11	1315	X	X	X					X										
3	TP2 - 3.0m	CL9337	S	3	09/05/11	1330	X	X	X					X										
4	TP2 - 4.0m	CL9338	S	3	09/05/11	1345	X	X	X					X										
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa
MAXXAM TASK ORDER #: 11062583
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TOG

MAXXAM JOB #: A955516
SAMPLES ENTERED BY: [illegible]

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	Yes				
TEMP 3/3/3°C	AVG	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO [signature]	09/05/11	18:00	tos HIRAL SONI	09/05/13	09:52

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	X	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *11-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A955516*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *23-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30054

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A955527
Received: 2009/05/13, 9:54

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	5	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	5	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	5	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	5	CAM SOP-00408	EPA 6010
MOISTURE	5	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30054

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A955527
Received: 2009/05/13, 9:54

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

Encryption Key

Ema Gitej

21 May 2009 11:24:02 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A955527
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CL9366		CL9367		
Sampling Date		2009/05/11 11:30		2009/05/11 11:45		
COC Number		30054		30054		
	Units	**TP1-2.0M**	**RDL**	**TP1-2.5M**	**RDL**	**QC Batch**
Moisture	%	63	0.2	20	0.2	1817290
Benzene	ug/g	4.3	0.06	<0.02	0.02	1818687
Toluene	ug/g	0.12	0.06	<0.02	0.02	1818687
Ethylbenzene	ug/g	13	0.06	0.09	0.02	1818687
o-Xylene	ug/g	0.93	0.06	0.13	0.02	1818687
p+m-Xylene	ug/g	2.2	0.1	0.36	0.04	1818687
Total Xylenes	ug/g	3.2	0.1	0.48	0.04	1818687
F1 (C6-C10)	ug/g	270	30	17	10	1818687
F1 (C6-C10) - BTEX	ug/g	250	30	16	10	1818687
F2 (C10-C16 Hydrocarbons)	ug/g	72	30	100	10	1819597
F3 (C16-C34 Hydrocarbons)	ug/g	180	30	78	10	1819597
F4 (C34-C50 Hydrocarbons)	ug/g	270	30	<10	10	1819597
Reached Baseline at C50	ug/g	Yes		Yes		1819597
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	82		82		1818687
o-Terphenyl	%	92		90		1819597
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	95		96		1818687
4-Bromofluorobenzene	%	102		102		1818687
D4-1,2-Dichloroethane	%	89		100		1818687

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955527
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CL9367		CL9368		
Sampling Date		2009/05/11 11:45		2009/05/11 12:00		
COC Number		30054		30054		
	Units	**TP1-2.5M Lab-Dup**	**RDL**	**TP1-3.5M**	**RDL**	**QC Batch**
Moisture	%		0.2	24	0.2	1817290
Benzene	ug/g	<0.02	0.02	7.7	0.2	1818687
Toluene	ug/g	<0.02	0.02	22	0.2	1818687
Ethylbenzene	ug/g	0.09	0.02	43	0.2	1818687
o-Xylene	ug/g	0.13	0.02	62	0.2	1818687
p+m-Xylene	ug/g	0.34	0.04	160	0.4	1818687
Total Xylenes	ug/g	0.47	0.04	220	0.4	1818687
F1 (C6-C10)	ug/g	23	10	2200	100	1818687
F1 (C6-C10) - BTEX	ug/g	23	10	1900	100	1818687
F2 (C10-C16 Hydrocarbons)	ug/g	130	10	2400	10	1819597
F3 (C16-C34 Hydrocarbons)	ug/g	110	10	1200	10	1819597
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1819597
Reached Baseline at C50	ug/g	Yes		Yes		1819597
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	81		124		1818687
o-Terphenyl	%	88		99		1819597
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	95		94		1818687
4-Bromofluorobenzene	%	104		105		1818687
D4-1,2-Dichloroethane	%	88		89		1818687

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955527
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CL9369	CL9370		
Sampling Date		2009/05/11 12:15	2009/05/11 12:00		
COC Number		30054	30054		
	Units	**TP1-4.1M**	**QA1**	**RDL**	**QC Batch**
Moisture	%	29	29	0.2	1817290
Benzene	ug/g	2.9	3.3	0.02	1818687
Toluene	ug/g	0.97	2.6	0.02	1818687
Ethylbenzene	ug/g	2.7	4.4	0.02	1818687
o-Xylene	ug/g	3.4	6.8	0.02	1818687
p+m-Xylene	ug/g	10	17	0.04	1818687
Total Xylenes	ug/g	13	23	0.04	1818687
F1 (C6-C10)	ug/g	120	210	10	1818687
F1 (C6-C10) - BTEX	ug/g	100	180	10	1818687
F2 (C10-C16 Hydrocarbons)	ug/g	230	600	10	1819597
F3 (C16-C34 Hydrocarbons)	ug/g	120	310	10	1819597
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1819597
Reached Baseline at C50	ug/g	Yes	Yes		1819597
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	81	91		1818687
o-Terphenyl	%	90	92		1819597
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	93	95		1818687
4-Bromofluorobenzene	%	104	104		1818687
D4-1,2-Dichloroethane	%	87	91		1818687

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955527
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CL9366	CL9367	CL9368		
Sampling Date		2009/05/11 11:30	2009/05/11 11:45	2009/05/11 12:00		
COC Number		30054	30054	30054		
	Units	**TP1-2.0M**	**TP1-2.5M**	**TP1-3.5M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	11	<5	7	5	1818554

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CL9369	CL9370	CL9370		
Sampling Date		2009/05/11 12:15	2009/05/11 12:00	2009/05/11 12:00		
COC Number		30054	30054	30054		
	Units	**TP1-4.1M**	**QA1**	**QA1 Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	8	8	6	5	1818554

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Job #: A955527
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CL9366 **Collected** 2009/05/11
Sample ID TP1-2.0M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818687	2009/05/13	2009/05/16	AGA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819597	2009/05/16	2009/05/19	JJE
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam ID CL9367 **Collected** 2009/05/11
Sample ID TP1-2.5M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818687	2009/05/13	2009/05/16	AGA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819597	2009/05/16	2009/05/19	JJE
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam ID CL9367 Dup **Collected** 2009/05/11
Sample ID TP1-2.5M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818687	2009/05/13	2009/05/16	AGA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819597	2009/05/16	2009/05/19	JJE

Maxxam ID CL9368 **Collected** 2009/05/11
Sample ID TP1-3.5M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818687	2009/05/13	2009/05/16	AGA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819597	2009/05/16	2009/05/19	JJE
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam ID CL9369 **Collected** 2009/05/11
Sample ID TP1-4.1M **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818687	2009/05/13	2009/05/16	AGA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819597	2009/05/16	2009/05/19	JJE
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam Job #: A955527
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CL9370 **Collected** 2009/05/11
Sample ID QA1 **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1818687	2009/05/13	2009/05/16	AGA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819597	2009/05/16	2009/05/19	JJE
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT
MOISTURE	BAL	1817290	N/A	2009/05/14	AC

Maxxam ID CL9370 Dup **Collected** 2009/05/11
Sample ID QA1 **Shipped** 2009/05/11
Matrix Soil **Received** 2009/05/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Metals Analysis by ICP	ICP	1818554	2009/05/15	2009/05/15	APT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A955527
Report Date: 2009/05/21

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample CL9366-01: F1-BTEX Analysis: Detection limits were adjusted for high moisture content.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A955527

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1818554	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/15	<5		ug/g	
1818687	AGA	Method Blank	1,4-Difluorobenzene	2009/05/16		101	%	60 - 140
			4-Bromofluorobenzene	2009/05/16		96	%	60 - 140
			D10-Ethylbenzene	2009/05/16		88	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/16		106	%	60 - 140
			Benzene	2009/05/16	<0.02		ug/g	
			Toluene	2009/05/16	<0.02		ug/g	
			Ethylbenzene	2009/05/16	<0.02		ug/g	
			o-Xylene	2009/05/16	<0.02		ug/g	
			p+m-Xylene	2009/05/16	<0.04		ug/g	
			Total Xylenes	2009/05/16	<0.04		ug/g	
			F1 (C6-C10)	2009/05/16	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/16	<10		ug/g	
1819597	JJE	Method Blank	o-Terphenyl	2009/05/19		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/19	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/19	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/19	<10		ug/g	
1818687	AGA	RPD [CL9367-02]	Benzene	2009/05/16	NC		%	50
			Toluene	2009/05/16	NC		%	50
			Ethylbenzene	2009/05/16	NC		%	50
			o-Xylene	2009/05/16	2.6		%	50
			p+m-Xylene	2009/05/16	5.4		%	50
			Total Xylenes	2009/05/16	3.3		%	50
			F1 (C6-C10)	2009/05/16	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/16	NC		%	50
1819597	JJE	RPD [CL9367-02]	F2 (C10-C16 Hydrocarbons)	2009/05/19	25.3		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/19	29.6		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/19	NC		%	50
1818554	APT	RPD [CL9370-01]	Acid Extractable Lead (Pb)	2009/05/15	NC		%	35
		MATRIX SPIKE [CL9370-01]	Acid Extractable Lead (Pb)	2009/05/15		100	%	75 - 125
1818687	AGA	MATRIX SPIKE [CL9367-02]	1,4-Difluorobenzene	2009/05/16		96	%	60 - 140
			4-Bromofluorobenzene	2009/05/16		105	%	60 - 140
			D10-Ethylbenzene	2009/05/16		84	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/16		91	%	60 - 140
			Benzene	2009/05/16		68	%	60 - 140
			Toluene	2009/05/16		79	%	60 - 140
			Ethylbenzene	2009/05/16		78	%	60 - 140
			o-Xylene	2009/05/16		83	%	60 - 140
			p+m-Xylene	2009/05/16		77	%	60 - 140
			F1 (C6-C10)	2009/05/16		89	%	60 - 140
1819597	JJE	MATRIX SPIKE [CL9367-02]	o-Terphenyl	2009/05/19		78	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/19		86	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/19		86	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/19		86	%	60 - 130
1818687	AGA	LCS	1,4-Difluorobenzene	2009/05/19		93	%	60 - 140
			4-Bromofluorobenzene	2009/05/19		109	%	60 - 140
			D10-Ethylbenzene	2009/05/19		99	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/19		92	%	60 - 140
			Benzene	2009/05/19		81	%	60 - 140
			Toluene	2009/05/19		92	%	60 - 140
			Ethylbenzene	2009/05/19		96	%	60 - 140
			o-Xylene	2009/05/19		102	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A955527

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1818687	AGA	LCS	p+m-Xylene	2009/05/19		95	%	60 - 140
			F1 (C6-C10)	2009/05/19		105	%	60 - 140
1819597	JJE	LCS	o-Terphenyl	2009/05/19		79	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/19		87	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/19		87	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/19		87	%	60 - 130
1818554	APT	SRM	Acid Extractable Lead (Pb)	2009/05/15		94	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

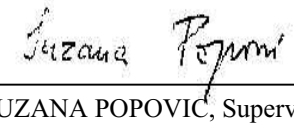
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A955527

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

BRAD NEWMAN, Scientific Specialist



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 30054

COMPANY NAME: OConnor Associates (OA)	PH #: 613 742 1781 FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518 T01
SAMPLER NAME (PRINT): Pierre D'Angelo	PROJECT MANAGER: Nancy Haywood

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	TP1 - 2.0m	CL9366	S	3	09/05/11	1130	X	X	X					X										
2	TP1 - 2.5m	CL9367	S	3	09/05/11	1145	X	X	X					X										
3	TP1 - 3.5m	CL9368	S	3	09/05/11	1200	X	X	X					X										
4	TP1 - 4.1m	CL9369	S	3	09/05/11	1215	X	X	X					X										
5	QA1	CL9370	S	3	09/05/11	1200	X	X	X					X										
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa	REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: -EDT -email j/cb confirmation -Test samples as per 706	MAXXAM JOB #: A955527
MAXXAM TASK ORDER #: 1062583			SAMPLES ENTERED BY:
IOL CONTACT: Scott Wetton			

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	yes	3 | 1 | 2C	

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/05/11	18:00	FED EX	09/05/13	09:54
			HIRAM SONI		

TURNAROUND TIMES

SOIL / WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) X	Standard	(15 days)
Rush	(3 days)	Rush	(9 days)
	(2 days)		(6 days)
	(1 day)		(3 days)
	(same day)		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *11-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A955527*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*Field duplicate RPD exceeded alert limits due to sample heterogeneity.*
Trip Blank Concentration			*X*	*All other field QC samples are within alert limits.*
Field Duplicate RPD		*X*		

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *21-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30056

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A956984
Received: 2009/05/15, 07:30

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30056

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A956984
Received: 2009/05/15, 07:30

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

Encryption Key

Malgosia Dancziger

22 May 2009 18:06:48 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A956984
Report Date: 2009/05/22

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CM6808	CM6808	CM6809		
Sampling Date		2009/05/14 10:15	2009/05/14 10:15	2009/05/14 10:30		
COC Number		30056	30056	30056		
	Units	**PAD1-F3-0.3M**	**PAD1-F3-0.3M Lab-Dup**	**PAD2-F5-0.3M**	**RDL**	**QC Batch**
Moisture	%	9.1		7.2	0.2	1820395
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1821381
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1821381
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	1821381
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.02	1821381
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.04	1821381
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.04	1821381
F1 (C6-C10)	ug/g	<10	<10	<10	10	1821381
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1821381
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1819771
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1819771
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1819771
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1819771
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	97	98	97		1821381
o-Terphenyl	%	88	88	89		1819771
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	103	105	102		1821381
4-Bromofluorobenzene	%	102	103	101		1821381
D4-1,2-Dichloroethane	%	106	107	104		1821381

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A956984
Report Date: 2009/05/22

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CM6810	CM6811		
Sampling Date		2009/05/14 11:00	2009/05/14 11:00		
COC Number		30056	30056		
	Units	**PAD3-F2-0.3M**	**QA2**	**RDL**	**QC Batch**
Moisture	%	14	9.0	0.2	1820395
Benzene	ug/g	<0.02	<0.02	0.02	1821381
Toluene	ug/g	<0.02	<0.02	0.02	1821381
Ethylbenzene	ug/g	<0.02	<0.02	0.02	1821381
o-Xylene	ug/g	<0.02	<0.02	0.02	1821381
p+m-Xylene	ug/g	<0.04	0.04	0.04	1821381
Total Xylenes	ug/g	<0.04	0.04	0.04	1821381
F1 (C6-C10)	ug/g	<10	<10	10	1821381
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	1821381
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	1819771
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	1819771
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1819771
Reached Baseline at C50	ug/g	Yes	Yes		1819771
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	103	100		1821381
o-Terphenyl	%	88	88		1819771
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	103		1821381
4-Bromofluorobenzene	%	101	101		1821381
D4-1,2-Dichloroethane	%	104	105		1821381

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A956984
Report Date: 2009/05/22

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CM6808	CM6809	CM6810		
Sampling Date		2009/05/14 10:15	2009/05/14 10:30	2009/05/14 11:00		
COC Number		30056	30056	30056		
	Units	**PAD1-F3-0.3M**	**PAD2-F5-0.3M**	**PAD3-F2-0.3M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	6	8	6	5	1820653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CM6811		
Sampling Date		2009/05/14 11:00		
COC Number		30056		
	Units	**QA2**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	5	1820653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A956984
Report Date: 2009/05/22

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CM6808 **Collected** 2009/05/14
Sample ID PAD1-F3-0.3M **Shipped** 2009/05/14
Matrix Soil **Received** 2009/05/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1821381	2009/05/15	2009/05/20	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819771	2009/05/16	2009/05/20	DPO
Total Metals Analysis by ICP	ICP	1820653	2009/05/19	2009/05/20	APT
MOISTURE	BAL	1820395	N/A	2009/05/19	AC

Maxxam ID CM6808 Dup **Collected** 2009/05/14
Sample ID PAD1-F3-0.3M **Shipped** 2009/05/14
Matrix Soil **Received** 2009/05/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1821381	2009/05/15	2009/05/20	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819771	2009/05/16	2009/05/20	DPO

Maxxam ID CM6809 **Collected** 2009/05/14
Sample ID PAD2-F5-0.3M **Shipped** 2009/05/14
Matrix Soil **Received** 2009/05/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1821381	2009/05/15	2009/05/20	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819771	2009/05/16	2009/05/20	DPO
Total Metals Analysis by ICP	ICP	1820653	2009/05/19	2009/05/20	APT
MOISTURE	BAL	1820395	N/A	2009/05/19	AC

Maxxam ID CM6810 **Collected** 2009/05/14
Sample ID PAD3-F2-0.3M **Shipped** 2009/05/14
Matrix Soil **Received** 2009/05/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1821381	2009/05/15	2009/05/20	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819771	2009/05/16	2009/05/20	DPO
Total Metals Analysis by ICP	ICP	1820653	2009/05/19	2009/05/20	APT
MOISTURE	BAL	1820395	N/A	2009/05/19	AC

Maxxam ID CM6811 **Collected** 2009/05/14
Sample ID QA2 **Shipped** 2009/05/14
Matrix Soil **Received** 2009/05/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1821381	2009/05/15	2009/05/20	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1819771	2009/05/16	2009/05/20	DPO
Total Metals Analysis by ICP	ICP	1820653	2009/05/19	2009/05/20	APT
MOISTURE	BAL	1820395	N/A	2009/05/19	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A956984
Report Date: 2009/05/22

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	0.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A956984

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1819771	DPO	Method Blank	o-Terphenyl	2009/05/19		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/19	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/19	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/19	<10		ug/g	
1820653	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/20	<5		ug/g	
1821381	LRA	Method Blank	1,4-Difluorobenzene	2009/05/20		104	%	60 - 140
			4-Bromofluorobenzene	2009/05/20		100	%	60 - 140
			D10-Ethylbenzene	2009/05/20		97	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/20		104	%	60 - 140
			Benzene	2009/05/20	<0.02		ug/g	
			Toluene	2009/05/20	<0.02		ug/g	
			Ethylbenzene	2009/05/20	<0.02		ug/g	
			o-Xylene	2009/05/20	<0.02		ug/g	
			p+m-Xylene	2009/05/20	<0.04		ug/g	
			Total Xylenes	2009/05/20	<0.04		ug/g	
			F1 (C6-C10)	2009/05/20	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/20	<10		ug/g	
1819771	DPO	RPD [CM6808-02]	F2 (C10-C16 Hydrocarbons)	2009/05/20	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/20	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/20	NC		%	50
1821381	LRA	RPD [CM6808-02]	Benzene	2009/05/20	NC		%	50
			Toluene	2009/05/20	NC		%	50
			Ethylbenzene	2009/05/20	NC		%	50
			o-Xylene	2009/05/20	NC		%	50
			p+m-Xylene	2009/05/20	NC		%	50
			Total Xylenes	2009/05/20	NC		%	50
			F1 (C6-C10)	2009/05/20	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/20	NC		%	50
1819771	DPO	MATRIX SPIKE [CM6808-02]	o-Terphenyl	2009/05/19		84	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/19		84	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/19		84	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/19		84	%	60 - 130
1821381	LRA	MATRIX SPIKE [CM6808-02]	1,4-Difluorobenzene	2009/05/20		103	%	60 - 140
			4-Bromofluorobenzene	2009/05/20		98	%	60 - 140
			D10-Ethylbenzene	2009/05/20		101	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/20		102	%	60 - 140
			Benzene	2009/05/20		88	%	60 - 140
			Toluene	2009/05/20		93	%	60 - 140
			Ethylbenzene	2009/05/20		95	%	60 - 140
			o-Xylene	2009/05/20		95	%	60 - 140
			p+m-Xylene	2009/05/20		93	%	60 - 140
			F1 (C6-C10)	2009/05/20		92	%	60 - 140
1819771	DPO	LCS	o-Terphenyl	2009/05/19		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/19		90	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/19		90	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/19		90	%	60 - 130
1821381	LRA	LCS	1,4-Difluorobenzene	2009/05/20		104	%	60 - 140
			4-Bromofluorobenzene	2009/05/20		102	%	60 - 140
			D10-Ethylbenzene	2009/05/20		98	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/20		106	%	60 - 140
			Benzene	2009/05/20		86	%	60 - 140
			Toluene	2009/05/20		90	%	60 - 140
			Ethylbenzene	2009/05/20		92	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A956984

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1821381	LRA	LCS	o-Xylene	2009/05/20		93	%	60 - 140
			p+m-Xylene	2009/05/20		89	%	60 - 140
			F1 (C6-C10)	2009/05/20		74	%	60 - 140
1820653	APT	SRM	Acid Extractable Lead (Pb)	2009/05/20		99	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

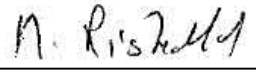
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

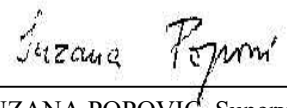
Maxxam Job #: A956984

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 30056

COMPANY NAME: O'Connor Associates (OA)	PH #: 613 742 1781
	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): Pierre D'Angelo	PROJECT MANAGER: Nancy Haywood

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	PAD1-F3-0.3m	CM6808	S	3	09/05/14	1015	X	X	X					X										
2	PAD2-F5-0.3m	CM6809	S	3	09/05/14	1030	X	X	X					X										
3	PAD3-F2-0.3m	CM6810	S	3	09/05/14	1100	X	X	X					X										
4	QA2	CM6811	S	3	09/05/14	1100	X	X	X					X										
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa	REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: -EDT -email/fax confirmation -Test samples as per TOR
MAXXAM TASK ORDER #: 1106258.3		MAXXAM JOB #: A956984
IOL CONTACT: Scott Welton		SAMPLES ENTERED BY: TL/mk

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 11.0/0°C AVG	YES	TEMP AVG		TEMP AVG	

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) X	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO PDA	09/05/14	18:00	Zofia ZOFIA ZENTY	09/05/15	7:30

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *14-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A956984*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

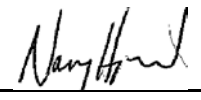
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *22-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30057

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A958287
Received: 2009/05/20, 07:34

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	2	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	CAM SOP-00316	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	2	CAM SOP-00408	EPA 6010
MOISTURE	2	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30057

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A958287
Received: 2009/05/20, 07:34

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

Encryption Key

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A958287
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CN3760	CN3761	CN3761		
Sampling Date		2009/05/19 14:00	2009/05/19 15:00	2009/05/19 15:00		
COC Number		30057	30057	30057		
	Units	**SP-1**	**SP-2**	**SP-2 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	3.1	7.3		0.2	1821618
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1825462
Toluene	ug/g	0.06	<0.02	<0.02	0.02	1825462
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	1825462
o-Xylene	ug/g	0.03	<0.02	<0.02	0.02	1825462
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.04	1825462
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.04	1825462
F1 (C6-C10)	ug/g	18	<10	<10	10	1825462
F1 (C6-C10) - BTEX	ug/g	17	<10	<10	10	1825462
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1822167
F3 (C16-C34 Hydrocarbons)	ug/g	31	<10	<10	10	1822167
F4 (C34-C50 Hydrocarbons)	ug/g	64	<10	<10	10	1822167
Reached Baseline at C50	ug/g	No	Yes	Yes		1822167
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	93	89	93		1825462
o-Terphenyl	%	86	86	90		1822167
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	101	101		1825462
4-Bromofluorobenzene	%	100	103	101		1825462
D4-1,2-Dichloroethane	%	97	99	99		1825462

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A958287
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CN3760	CN3761		
Sampling Date		2009/05/19 14:00	2009/05/19 15:00		
COC Number		30057	30057		
	Units	**SP-1**	**SP-2**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	10	7	5	1822806

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A958287
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		CN3760	CN3760		
Sampling Date		2009/05/19 14:00	2009/05/19 14:00		
COC Number		30057	30057		
	Units	**SP-1**	**SP-1 Lab-Dup**	**RDL**	**QC Batch**
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	660	770	100	1826842

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A958287
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CN3760 **Collected** 2009/05/19
Sample ID SP-1 **Shipped** 2009/05/19
Matrix Soil **Received** 2009/05/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1825462	2009/05/20	2009/05/24	ABD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1822167	2009/05/20	2009/05/22	JKA
F4G (CCME Hydrocarbons Gravimetric)	BAL	1826842	2009/05/25	2009/05/26	DDS
Total Metals Analysis by ICP	ICP	1822806	2009/05/21	2009/05/21	APT
MOISTURE	BAL	1821618	N/A	2009/05/20	AC

Maxxam ID CN3760 Dup **Collected** 2009/05/19
Sample ID SP-1 **Shipped** 2009/05/19
Matrix Soil **Received** 2009/05/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
F4G (CCME Hydrocarbons Gravimetric)	BAL	1826842	2009/05/25	2009/05/26	DDS

Maxxam ID CN3761 **Collected** 2009/05/19
Sample ID SP-2 **Shipped** 2009/05/19
Matrix Soil **Received** 2009/05/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1825462	2009/05/20	2009/05/24	ABD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1822167	2009/05/20	2009/05/22	JKA
Total Metals Analysis by ICP	ICP	1822806	2009/05/21	2009/05/21	APT
MOISTURE	BAL	1821618	N/A	2009/05/20	AC

Maxxam ID CN3761 Dup **Collected** 2009/05/19
Sample ID SP-2 **Shipped** 2009/05/19
Matrix Soil **Received** 2009/05/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1825462	2009/05/20	2009/05/24	ABD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1822167	2009/05/20	2009/05/22	JKA

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A958287
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

F4G analysis included for samples.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A958287

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1822167	JKA	Method Blank	o-Terphenyl	2009/05/22		77	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/22	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/22	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/22	<10		ug/g	
1822806	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/21	<5		ug/g	
1825462	ABD	Method Blank	1,4-Difluorobenzene	2009/05/24		98	%	60 - 140
			4-Bromofluorobenzene	2009/05/24		100	%	60 - 140
			D10-Ethylbenzene	2009/05/24		87	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/24		98	%	60 - 140
			Benzene	2009/05/24	<0.02		ug/g	
			Toluene	2009/05/24	<0.02		ug/g	
			Ethylbenzene	2009/05/24	<0.02		ug/g	
			o-Xylene	2009/05/24	<0.02		ug/g	
			p+m-Xylene	2009/05/24	<0.04		ug/g	
			Total Xylenes	2009/05/24	<0.04		ug/g	
			F1 (C6-C10)	2009/05/24	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/24	<10		ug/g	
1826842	DDS	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2009/05/26	<100		ug/g	
		RPD [CN3760-02]	F4G-sg (Grav. Heavy Hydrocarbons)	2009/05/26	15.4		%	50
1822167	JKA	RPD [CN3761-02]	F2 (C10-C16 Hydrocarbons)	2009/05/22	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/22	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/22	NC		%	50
1825462	ABD	RPD [CN3761-02]	Benzene	2009/05/24	NC		%	50
			Toluene	2009/05/24	NC		%	50
			Ethylbenzene	2009/05/24	NC		%	50
			o-Xylene	2009/05/24	NC		%	50
			p+m-Xylene	2009/05/24	NC		%	50
			Total Xylenes	2009/05/24	NC		%	50
			F1 (C6-C10)	2009/05/24	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/24	NC		%	50
1822167	JKA	MATRIX SPIKE [CN3761-02]	o-Terphenyl	2009/05/22		76	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/22		73	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/22		73	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/22		73	%	60 - 130
1825462	ABD	MATRIX SPIKE [CN3761-02]	1,4-Difluorobenzene	2009/05/24		99	%	60 - 140
			4-Bromofluorobenzene	2009/05/24		100	%	60 - 140
			D10-Ethylbenzene	2009/05/24		88	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/24		99	%	60 - 140
			Benzene	2009/05/24		86	%	60 - 140
			Toluene	2009/05/24		92	%	60 - 140
			Ethylbenzene	2009/05/24		90	%	60 - 140
			o-Xylene	2009/05/24		94	%	60 - 140
			p+m-Xylene	2009/05/24		85	%	60 - 140
			F1 (C6-C10)	2009/05/24		81	%	60 - 140
1826842	DDS	MATRIX SPIKE [CN3760-02]	F4G-sg (Grav. Heavy Hydrocarbons)	2009/05/26		81	%	65 - 135
1822167	JKA	LCS	o-Terphenyl	2009/05/22		75	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/22		71	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/22		71	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/22		71	%	60 - 130
1825462	ABD	LCS	1,4-Difluorobenzene	2009/05/24		100	%	60 - 140
			4-Bromofluorobenzene	2009/05/24		101	%	60 - 140
			D10-Ethylbenzene	2009/05/24		88	%	30 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A958287

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1825462	ABD	LCS	D4-1,2-Dichloroethane	2009/05/24		98	%	60 - 140
			Benzene	2009/05/24		84	%	60 - 140
			Toluene	2009/05/24		89	%	60 - 140
			Ethylbenzene	2009/05/24		88	%	60 - 140
			o-Xylene	2009/05/24		90	%	60 - 140
			p+m-Xylene	2009/05/24		82	%	60 - 140
			F1 (C6-C10)	2009/05/24		89	%	60 - 140
1826842	DDS	LCS	F4G-sg (Grav. Heavy Hydrocarbons)	2009/05/26		86	%	65 - 135
1822806	APT	SRM	Acid Extractable Lead (Pb)	2009/05/21		99	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A958287

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

CRISTINA NERVO, Scientific Services

EWA PRANJIC, M.Sc., C.Chem, Scientific Specialist

SUZANA POPOVIC, Supervisor, Hydrocarbons

TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6263 Fax: (905) 817-5777 www.maxxam.ca

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *19-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A958287*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *27-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31957

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A959262
Received: 2009/05/21, 07:34

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31957

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A959262
Received: 2009/05/21, 07:34

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

Encryption Key

Ema Gitej

27 May 2009 16:02:11 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A959262
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CN7867	CN7868	CN7869		
Sampling Date		2009/05/20 14:00	2009/05/20 14:15	2009/05/20 14:30		
COC Number		31957	31957	31957		
	Units	**PAD3-F5-0.3M**	**PAD4-F2-0.3M**	**PAD4-F4-0.3M**	**RDL**	**QC Batch**
Moisture	%	7.6	8.1	8.9	0.2	1824401
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1825867
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1825867
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	1825867
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.02	1825867
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.04	1825867
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.04	1825867
F1 (C6-C10)	ug/g	<10	<10	<10	10	1825867
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1825867
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1825456
F3 (C16-C34 Hydrocarbons)	ug/g	12	55	38	10	1825456
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1825456
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1825456
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	90	87	85		1825867
o-Terphenyl	%	91	91	90		1825456
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	103	103	102		1825867
4-Bromofluorobenzene	%	100	99	99		1825867
D4-1,2-Dichloroethane	%	97	96	96		1825867

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A959262
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CN7870		
Sampling Date		2009/05/20 14:45		
COC Number		31957		
	Units	**PAD5-F5-0.3M**	**RDL**	**QC Batch**
Moisture	%	9.3	0.2	1824401
Benzene	ug/g	<0.02	0.02	1825867
Toluene	ug/g	<0.02	0.02	1825867
Ethylbenzene	ug/g	<0.02	0.02	1825867
o-Xylene	ug/g	<0.02	0.02	1825867
p+m-Xylene	ug/g	<0.04	0.04	1825867
Total Xylenes	ug/g	<0.04	0.04	1825867
F1 (C6-C10)	ug/g	<10	10	1825867
F1 (C6-C10) - BTEX	ug/g	<10	10	1825867
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	1825456
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1825456
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1825456
Reached Baseline at C50	ug/g	Yes		1825456
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	91		1825867
o-Terphenyl	%	92		1825456
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	104		1825867
4-Bromofluorobenzene	%	99		1825867
D4-1,2-Dichloroethane	%	96		1825867

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A959262
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CN7867	CN7868	CN7869		
Sampling Date		2009/05/20 14:00	2009/05/20 14:15	2009/05/20 14:30		
COC Number		31957	31957	31957		
	Units	**PAD3-F5-0.3M**	**PAD4-F2-0.3M**	**PAD4-F4-0.3M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	15	16	21	5	1825752

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CN7870		
Sampling Date		2009/05/20 14:45		
COC Number		31957		
	Units	**PAD5-F5-0.3M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	10	5	1825752

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A959262
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CN7867 **Collected** 2009/05/20
Sample ID PAD3-F5-0.3M **Shipped** 2009/05/20
Matrix Soil **Received** 2009/05/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1825867	2009/05/21	2009/05/25	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1825456	2009/05/23	2009/05/25	DPO
Total Metals Analysis by ICP	ICP	1825752	2009/05/25	2009/05/25	APT
MOISTURE	BAL	1824401	N/A	2009/05/22	GKL

Maxxam ID CN7868 **Collected** 2009/05/20
Sample ID PAD4-F2-0.3M **Shipped** 2009/05/20
Matrix Soil **Received** 2009/05/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1825867	2009/05/21	2009/05/25	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1825456	2009/05/23	2009/05/25	DPO
Total Metals Analysis by ICP	ICP	1825752	2009/05/25	2009/05/25	APT
MOISTURE	BAL	1824401	N/A	2009/05/22	GKL

Maxxam ID CN7869 **Collected** 2009/05/20
Sample ID PAD4-F4-0.3M **Shipped** 2009/05/20
Matrix Soil **Received** 2009/05/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1825867	2009/05/21	2009/05/25	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1825456	2009/05/23	2009/05/25	DPO
Total Metals Analysis by ICP	ICP	1825752	2009/05/25	2009/05/25	APT
MOISTURE	BAL	1824401	N/A	2009/05/22	GKL

Maxxam ID CN7870 **Collected** 2009/05/20
Sample ID PAD5-F5-0.3M **Shipped** 2009/05/20
Matrix Soil **Received** 2009/05/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1825867	2009/05/21	2009/05/25	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1825456	2009/05/23	2009/05/26	DPO
Total Metals Analysis by ICP	ICP	1825752	2009/05/25	2009/05/25	APT
MOISTURE	BAL	1824401	N/A	2009/05/22	GKL

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A959262
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A959262

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1825456	DPO	Method Blank	o-Terphenyl	2009/05/25		98	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/25	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/25	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/25	<10		ug/g	
1825752	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/25	<5		ug/g	
1825867	MSB	Method Blank	1,4-Difluorobenzene	2009/05/25		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/25		99	%	60 - 140
			D10-Ethylbenzene	2009/05/25		86	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/25		98	%	60 - 140
			Benzene	2009/05/25	<0.02		ug/g	
			Toluene	2009/05/25	<0.02		ug/g	
			Ethylbenzene	2009/05/25	<0.02		ug/g	
			o-Xylene	2009/05/25	<0.02		ug/g	
			p+m-Xylene	2009/05/25	<0.04		ug/g	
			Total Xylenes	2009/05/25	<0.04		ug/g	
			F1 (C6-C10)	2009/05/25	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/25	<10		ug/g	
1825456	DPO	LCS	o-Terphenyl	2009/05/25		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/25		90	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/25		90	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/25		90	%	60 - 130
1825867	MSB	LCS	1,4-Difluorobenzene	2009/05/25		103	%	60 - 140
			4-Bromofluorobenzene	2009/05/25		99	%	60 - 140
			D10-Ethylbenzene	2009/05/25		89	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/25		96	%	60 - 140
			Benzene	2009/05/25		88	%	60 - 140
			Toluene	2009/05/25		93	%	60 - 140
			Ethylbenzene	2009/05/25		98	%	60 - 140
			o-Xylene	2009/05/25		99	%	60 - 140
			p+m-Xylene	2009/05/25		96	%	60 - 140
			F1 (C6-C10)	2009/05/25		97	%	60 - 140
1825752	APT	SRM	Acid Extractable Lead (Pb)	2009/05/25		100	%	75 - 125

QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A959262

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

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31957

COMPANY NAME: (OA)	PH #: 613 742 7781
O'Connor Associates	FAX #: 613 742 6064
COMPANY ADDRESS:	CLIENT PROJECT ID: (#)
5420 Canotek Rd #104 Ottawa, ON	10-8518 T01
SAMPLER NAME (PRINT):	PROJECT MANAGER:
PIERRE D'ANGELO	NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	PAD3 - F5 - 0.3m	CN7867	S	3	09/05/20	1400	X	X	X					X										
2	PAD4 - F2 - 0.3m	CN7868	S	3	09/05/20	1415	X	X	X					X										
3	PAD4 - F4 - 0.3m	CN7869	S	3	09/05/20	1430	X	X	X					X										
4	PAD5 - F5 - 0.3m	CN7870	S	3	09/05/20	1445	X	X	X					X										
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION:	REGULATORY CRITERIA / DETECTION LIMITS:	SPECIAL INSTRUCTIONS:	MAXXAM JOB #:
1545 Woodroffe Ave, Ottawa	O. Reg 153/04 Table 3	-EDT -email job confirmation -hst samples as per TOG	A959262
MAXXAM TASK ORDER #: 1106258 3			SAMPLES ENTERED BY:
IOL CONTACT: Scott Wetton			

COOLER ID 1	CUSTODY SEAL YES	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 2 | 3 | 3° C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

	SOIL / WATER		AIR – SUMMA CANISTERS	
Standard	(5 days)	X	Standard	(15 days) ☐
Rush	(3 days)	☐	Rush	(9 days) ☐
	(2 days)	☐		(6 days) ☐
	(1 day)	☐		(3 days) ☐
	(same day)	☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
~~Pierre D'ANGELO~~	09/05/20	18:00	ZOFIA	09/05/21	7:34
			ZOFIA ZEKOVA		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *20-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A959262*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *28-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31958

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A960036
Received: 2009/05/22, 07:33

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31958

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A960036
Received: 2009/05/22, 07:33

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

Encryption Key

Ema Gitej

28 May 2009 17:54:23 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A960036
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO1527	CO1528	CO1528		
Sampling Date		2009/05/21 14:00	2009/05/21 14:30	2009/05/21 14:30		
COC Number		31958	31958	31958		
	Units	**DISPENSER 1 - F0.5M**	**DISPENSER 2 - F0.5M**	**DISPENSER 2 - F0.5M Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	11	5.5		0.2	1825238
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1829150
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1829150
Ethylbenzene	ug/g	<0.02	0.03	0.08	0.02	1829150
o-Xylene	ug/g	0.13	<0.02	<0.02	0.02	1829150
p+m-Xylene	ug/g	0.15	<0.04	<0.04	0.04	1829150
Total Xylenes	ug/g	0.28	<0.04	<0.04	0.04	1829150
F1 (C6-C10)	ug/g	74	<10	<10	10	1829150
F1 (C6-C10) - BTEX	ug/g	73	<10	<10	10	1829150
F2 (C10-C16 Hydrocarbons)	ug/g	6900	180	170	10	1827854
F3 (C16-C34 Hydrocarbons)	ug/g	6000	350	350	10	1827854
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1827854
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1827854
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	95	93	105		1829150
o-Terphenyl	%	116	87	85		1827854
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	99	103	98		1829150
4-Bromofluorobenzene	%	100	101	101		1829150
D4-1,2-Dichloroethane	%	91	97	101		1829150

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960036
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO1529	CO1530	CO1530		
Sampling Date		2009/05/21 14:45	2009/05/21 15:00	2009/05/21 15:00		
COC Number		31958	31958	31958		
	Units	**TRENCH1 - F2 - 0.5M**	**TRENCH1 - F7 - 0.5M**	**TRENCH1 - F7 - 0.5M Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	8.1	7.8	8.0	0.2	1825238
Benzene	ug/g	<0.02	<0.02		0.02	1829150
Toluene	ug/g	<0.02	<0.02		0.02	1829150
Ethylbenzene	ug/g	<0.02	<0.02		0.02	1829150
o-Xylene	ug/g	<0.02	<0.02		0.02	1829150
p+m-Xylene	ug/g	<0.04	<0.04		0.04	1829150
Total Xylenes	ug/g	<0.04	<0.04		0.04	1829150
F1 (C6-C10)	ug/g	<10	<10		10	1829150
F1 (C6-C10) - BTEX	ug/g	<10	<10		10	1829150
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10		10	1827854
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10		10	1827854
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10		10	1827854
Reached Baseline at C50	ug/g	Yes	Yes			1827854
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	95	92			1829150
o-Terphenyl	%	80	82			1827854
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	103	103			1829150
4-Bromofluorobenzene	%	99	99			1829150
D4-1,2-Dichloroethane	%	92	94			1829150

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960036
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CO1527	CO1528	CO1529		
Sampling Date		2009/05/21 14:00	2009/05/21 14:30	2009/05/21 14:45		
COC Number		31958	31958	31958		
	Units	**DISPENSER 1 - F0.5M**	**DISPENSER 2 - F0.5M**	**TRENCH1 - F2 - 0.5M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	110	33	10	5	1826877

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CO1530		
Sampling Date		2009/05/21 15:00		
COC Number		31958		
	Units	**TRENCH1 - F7 - 0.5M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	6	5	1826877

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960036
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CO1527 **Collected** 2009/05/21
Sample ID DISPENSER 1 - F0.5M **Shipped** 2009/05/21
Matrix Soil **Received** 2009/05/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829150	2009/05/22	2009/05/28	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827854	2009/05/26	2009/05/27	BLZ
Total Metals Analysis by ICP	ICP	1826877	2009/05/26	2009/05/26	APT
MOISTURE	BAL	1825238	N/A	2009/05/23	GKL

Maxxam ID CO1528 **Collected** 2009/05/21
Sample ID DISPENSER 2 - F0.5M **Shipped** 2009/05/21
Matrix Soil **Received** 2009/05/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829150	2009/05/22	2009/05/27	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827854	2009/05/26	2009/05/27	BLZ
Total Metals Analysis by ICP	ICP	1826877	2009/05/26	2009/05/26	APT
MOISTURE	BAL	1825238	N/A	2009/05/23	GKL

Maxxam ID CO1528 Dup **Collected** 2009/05/21
Sample ID DISPENSER 2 - F0.5M **Shipped** 2009/05/21
Matrix Soil **Received** 2009/05/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829150	2009/05/22	2009/05/28	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827854	2009/05/26	2009/05/27	BLZ

Maxxam ID CO1529 **Collected** 2009/05/21
Sample ID TRENCH1 - F2 - 0.5M **Shipped** 2009/05/21
Matrix Soil **Received** 2009/05/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829150	2009/05/22	2009/05/28	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827854	2009/05/26	2009/05/27	BLZ
Total Metals Analysis by ICP	ICP	1826877	2009/05/26	2009/05/26	APT
MOISTURE	BAL	1825238	N/A	2009/05/23	GKL

Maxxam ID CO1530 **Collected** 2009/05/21
Sample ID TRENCH1 - F7 - 0.5M **Shipped** 2009/05/21
Matrix Soil **Received** 2009/05/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829150	2009/05/22	2009/05/28	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827854	2009/05/26	2009/05/27	BLZ
Total Metals Analysis by ICP	ICP	1826877	2009/05/26	2009/05/26	APT
MOISTURE	BAL	1825238	N/A	2009/05/23	GKL

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960036
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID	CO1530 Dup	**Collected**	2009/05/21
Sample ID	TRENCH1 - F7 - 0.5M	**Shipped**	2009/05/21
Matrix	Soil	**Received**	2009/05/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	1825238	N/A	2009/05/23	GKL

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960036
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A960036

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1826877	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/26	<5		ug/g	
1827854	BLZ	Method Blank	o-Terphenyl	2009/05/27		92	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/27	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/27	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/27	<10		ug/g	
1829150	MSB	Method Blank	1,4-Difluorobenzene	2009/05/27		103	%	60 - 140
			4-Bromofluorobenzene	2009/05/27		100	%	60 - 140
			D10-Ethylbenzene	2009/05/27		94	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/27		99	%	60 - 140
			Benzene	2009/05/27	<0.02		ug/g	
			Toluene	2009/05/27	<0.02		ug/g	
			Ethylbenzene	2009/05/27	<0.02		ug/g	
			o-Xylene	2009/05/27	<0.02		ug/g	
			p+m-Xylene	2009/05/27	<0.04		ug/g	
			Total Xylenes	2009/05/27	<0.04		ug/g	
			F1 (C6-C10)	2009/05/27	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/27	<10		ug/g	
1827854	BLZ	RPD [CO1528-02]	F2 (C10-C16 Hydrocarbons)	2009/05/27	0.4		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/27	0.2		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/27	NC		%	50
1829150	MSB	RPD [CO1528-02]	Benzene	2009/05/28	NC		%	50
			Toluene	2009/05/28	NC		%	50
			Ethylbenzene	2009/05/28	NC		%	50
			o-Xylene	2009/05/28	NC		%	50
			p+m-Xylene	2009/05/28	NC		%	50
			Total Xylenes	2009/05/28	NC		%	50
			F1 (C6-C10)	2009/05/28	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/28	NC		%	50
1825238	GKL	RPD [CO1530-02]	Moisture	2009/05/23	2.5		%	50
1827854	BLZ	MATRIX SPIKE [CO1528-02]	o-Terphenyl	2009/05/27		90	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/27		76	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/27		76	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/27		76	%	60 - 130
1829150	MSB	MATRIX SPIKE [CO1528-02]	1,4-Difluorobenzene	2009/05/27		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/27		101	%	60 - 140
			D10-Ethylbenzene	2009/05/27		97	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/27		94	%	60 - 140
			Benzene	2009/05/27		94	%	60 - 140
			Toluene	2009/05/27		100	%	60 - 140
			Ethylbenzene	2009/05/27		108	%	60 - 140
			o-Xylene	2009/05/27		111	%	60 - 140
			p+m-Xylene	2009/05/27		104	%	60 - 140
			F1 (C6-C10)	2009/05/27		94	%	60 - 140
1827854	BLZ	LCS	o-Terphenyl	2009/05/27		87	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/27		71	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/27		71	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/27		71	%	60 - 130
1829150	MSB	LCS	1,4-Difluorobenzene	2009/05/27		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/27		100	%	60 - 140
			D10-Ethylbenzene	2009/05/27		96	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/27		97	%	60 - 140
			Benzene	2009/05/27		94	%	60 - 140
			Toluene	2009/05/27		98	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A960036

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1829150	MSB	LCS	Ethylbenzene	2009/05/27		103	%	60 - 140
			o-Xylene	2009/05/27		106	%	60 - 140
			p+m-Xylene	2009/05/27		103	%	60 - 140
			F1 (C6-C10)	2009/05/27		90	%	60 - 140
1826877	APT	SRM	Acid Extractable Lead (Pb)	2009/05/26		98	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A960036

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

CRISTINA NERVO, Scientific Services

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 31958

COMPANY NAME: O'Connor Associates (OA)
PH #: 613 742 1781
FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa ON K1J 1E9
CLIENT PROJECT ID: (#) 10-8518 T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO
PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Dispenser 1-F0.5m	C01527	S	3	09/05/21	1400	X	X	X					X										
2	Dispenser 2-F0.5m	C01528	S	3	09/05/21	1430	X	X	X					X										
3	TRENCH1-F2-0.5m	C01529	S	3	09/05/21	1445	X	X	X					X										
4	TRENCH1-F7-0.5m	C01530	S	3	09/05/21	1500	X	X	X					X										
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa
MAXXAM TASK ORDER #: 11062583
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TDG

MAXXAM JOB #: A960036
SAMPLES ENTERED BY: [illegible]

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 2/2/3°C	AVG YES	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/05/21	18:30	Zofia ZOFIA ZENTA	09/05/22	7:33

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	X	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *21-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A960036*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *29-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31959

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A960760
Received: 2009/05/25, 07:40

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	7	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	7	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	7	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	7	CAM SOP-00408	EPA 6010
MOISTURE	7	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31959

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A960760
Received: 2009/05/25, 07:40

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

Encryption Key

Ema Gitej

29 May 2009 18:33:19 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A960760
Report Date: 2009/05/29

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO5858		CO5859		
Sampling Date		2009/05/20 11:00		2009/05/20 11:15		
COC Number		31959		31959		
	Units	**EX1-SW1-4.5M**	**RDL**	**EX1-SW2-4.0M**	**RDL**	**QC Batch**
Moisture	%	15	0.2	16	0.2	1828293
Benzene	ug/g	<0.2	0.2	<0.02	0.02	1829585
Toluene	ug/g	28	0.2	0.04	0.02	1829585
Ethylbenzene	ug/g	39	0.2	0.27	0.02	1829585
o-Xylene	ug/g	53	0.2	0.28	0.02	1829585
p+m-Xylene	ug/g	170	0.4	1.0	0.04	1829585
Total Xylenes	ug/g	230	0.4	1.3	0.04	1829585
F1 (C6-C10)	ug/g	1900	100	29	10	1829585
F1 (C6-C10) - BTEX	ug/g	1600	100	27	10	1829585
F2 (C10-C16 Hydrocarbons)	ug/g	290	10	<10	10	1829493
F3 (C16-C34 Hydrocarbons)	ug/g	23	10	<10	10	1829493
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1829493
Reached Baseline at C50	ug/g	Yes		Yes		1829493
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	117		82		1829585
o-Terphenyl	%	94		93		1829493
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	105		108		1829585
4-Bromofluorobenzene	%	103		103		1829585
D4-1,2-Dichloroethane	%	83		86		1829585

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960760
Report Date: 2009/05/29

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO5860	CO5861	CO5862		
Sampling Date		2009/05/21 09:00	2009/05/21 09:45	2009/05/20 12:00		
COC Number		31959	31959	31959		
	Units	**EX1-SW3-4.5M**	**EX1-SW4-4.5M**	**EX1-SW5-3.0M**	**RDL**	**QC Batch**
Moisture	%	16	16	29	0.2	1828293
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1829585
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1829585
Ethylbenzene	ug/g	0.05	<0.02	<0.02	0.02	1829585
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.02	1829585
p+m-Xylene	ug/g	0.07	<0.04	<0.04	0.04	1829585
Total Xylenes	ug/g	0.07	<0.04	<0.04	0.04	1829585
F1 (C6-C10)	ug/g	<10	<10	<10	10	1829585
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1829585
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1829493
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1829493
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1829493
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1829493
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	80	84	81		1829585
o-Terphenyl	%	99	95	94		1829493
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	107	112	109		1829585
4-Bromofluorobenzene	%	100	104	101		1829585
D4-1,2-Dichloroethane	%	80	83	84		1829585

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960760
Report Date: 2009/05/29

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO5863	CO5864		
Sampling Date		2009/05/20 13:30	2009/05/21 09:00		
COC Number		31959	31959		
	Units	**EX1-SW6-4.0M**	**QA3**	**RDL**	**QC Batch**
Moisture	%	27	14	0.2	1828293
Benzene	ug/g	<0.02	<0.02	0.02	1829585
Toluene	ug/g	<0.02	<0.02	0.02	1829585
Ethylbenzene	ug/g	<0.02	<0.02	0.02	1829585
o-Xylene	ug/g	<0.02	<0.02	0.02	1829585
p+m-Xylene	ug/g	0.06	<0.04	0.04	1829585
Total Xylenes	ug/g	0.06	<0.04	0.04	1829585
F1 (C6-C10)	ug/g	<10	<10	10	1829585
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	1829585
F2 (C10-C16 Hydrocarbons)	ug/g	<10	210	10	1829493
F3 (C16-C34 Hydrocarbons)	ug/g	<10	20	10	1829493
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1829493
Reached Baseline at C50	ug/g	Yes	Yes		1829493
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	79	87		1829585
o-Terphenyl	%	97	97		1829493
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105	113		1829585
4-Bromofluorobenzene	%	100	105		1829585
D4-1,2-Dichloroethane	%	82	84		1829585

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960760
Report Date: 2009/05/29

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CO5858	CO5859	CO5860		
Sampling Date		2009/05/20 11:00	2009/05/20 11:15	2009/05/21 09:00		
COC Number		31959	31959	31959		
	Units	**EX1-SW1-4.5M**	**EX1-SW2-4.0M**	**EX1-SW3-4.5M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	9	11	7	5	1829489

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CO5861	CO5862	CO5863		
Sampling Date		2009/05/21 09:45	2009/05/20 12:00	2009/05/20 13:30		
COC Number		31959	31959	31959		
	Units	**EX1-SW4-4.5M**	**EX1-SW5-3.0M**	**EX1-SW6-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	5	11	9	5	1829489

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CO5864		
Sampling Date		2009/05/21 09:00		
COC Number		31959		
	Units	**QA3**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	7	5	1829489

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960760
Report Date: 2009/05/29

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CO5858 **Collected** 2009/05/20
Sample ID EX1-SW1-4.5M **Shipped** 2009/05/22
Matrix Soil **Received** 2009/05/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829585	2009/05/25	2009/05/28	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829493	2009/05/28	2009/05/28	JKA
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828293	N/A	2009/05/27	AC

Maxxam ID CO5859 **Collected** 2009/05/20
Sample ID EX1-SW2-4.0M **Shipped** 2009/05/22
Matrix Soil **Received** 2009/05/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829585	2009/05/25	2009/05/28	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829493	2009/05/28	2009/05/28	JKA
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828293	N/A	2009/05/27	AC

Maxxam ID CO5860 **Collected** 2009/05/21
Sample ID EX1-SW3-4.5M **Shipped** 2009/05/22
Matrix Soil **Received** 2009/05/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829585	2009/05/25	2009/05/28	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829493	2009/05/28	2009/05/28	JKA
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828293	N/A	2009/05/27	AC

Maxxam ID CO5861 **Collected** 2009/05/21
Sample ID EX1-SW4-4.5M **Shipped** 2009/05/22
Matrix Soil **Received** 2009/05/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829585	2009/05/25	2009/05/28	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829493	2009/05/28	2009/05/28	JKA
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828293	N/A	2009/05/27	AC

Maxxam ID CO5862 **Collected** 2009/05/20
Sample ID EX1-SW5-3.0M **Shipped** 2009/05/22
Matrix Soil **Received** 2009/05/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829585	2009/05/25	2009/05/28	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829493	2009/05/28	2009/05/28	JKA
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828293	N/A	2009/05/27	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960760
Report Date: 2009/05/29

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CO5863 **Collected** 2009/05/20
Sample ID EX1-SW6-4.0M **Shipped** 2009/05/22
Matrix Soil **Received** 2009/05/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829585	2009/05/25	2009/05/29	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829493	2009/05/28	2009/05/28	JKA
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828293	N/A	2009/05/27	AC

Maxxam ID CO5864 **Collected** 2009/05/21
Sample ID QA3 **Shipped** 2009/05/22
Matrix Soil **Received** 2009/05/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829585	2009/05/25	2009/05/28	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829493	2009/05/28	2009/05/28	JKA
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828293	N/A	2009/05/27	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A960760
Report Date: 2009/05/29

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	0.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample CO5858-01: F1BTEX Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A960760

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1829489	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/28	<5		ug/g	
1829493	JKA	Method Blank	o-Terphenyl	2009/05/28		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/28	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/28	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/28	<10		ug/g	
1829585	JXI	Method Blank	1,4-Difluorobenzene	2009/05/28		108	%	60 - 140
			4-Bromofluorobenzene	2009/05/28		100	%	60 - 140
			D10-Ethylbenzene	2009/05/28		81	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/28		80	%	60 - 140
			Benzene	2009/05/28	<0.02		ug/g	
			Toluene	2009/05/28	<0.02		ug/g	
			Ethylbenzene	2009/05/28	<0.02		ug/g	
			o-Xylene	2009/05/28	<0.02		ug/g	
			p+m-Xylene	2009/05/28	<0.04		ug/g	
			Total Xylenes	2009/05/28	<0.04		ug/g	
			F1 (C6-C10)	2009/05/28	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/28	<10		ug/g	
1829493	JKA	LCS	o-Terphenyl	2009/05/29		97	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/29		78	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/29		78	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/29		78	%	60 - 130
1829585	JXI	LCS	1,4-Difluorobenzene	2009/05/28		108	%	60 - 140
			4-Bromofluorobenzene	2009/05/28		100	%	60 - 140
			D10-Ethylbenzene	2009/05/28		82	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/28		82	%	60 - 140
			Benzene	2009/05/28		72	%	60 - 140
			Toluene	2009/05/28		77	%	60 - 140
			Ethylbenzene	2009/05/28		80	%	60 - 140
			o-Xylene	2009/05/28		78	%	60 - 140
			p+m-Xylene	2009/05/28		77	%	60 - 140
			F1 (C6-C10)	2009/05/28		112	%	60 - 140
1829489	APT	SRM	Acid Extractable Lead (Pb)	2009/05/28		100	%	75 - 125

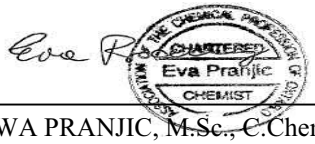
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A960760

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



EWA PRANJIC, M.Sc., C.Chem, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31959

COMPANY NAME: O'CONNOR Associates (OA)	PH #: 613 742 1781 FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518701
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex1-SW1-4.5m	C05858	S	3	09/05/20	11:00	X	X	X					X										
2	Ex1-SW2-4.0m	C05859	S	3	09/05/20	11:15	X	X	X					X										
3	Ex1-SW 3-4.5m	C05860	S	3	09/05/21	9:00	X	X	X					X										
4	Ex1-SW4-4.5m	C05861	S	3	09/05/21	9:45	X	X	X					X										
5	Ex1-SW5-3.0m	C05862	S	3	09/05/20	12:00	X	X	X					X										
6	Ex1-SW6-4.0m	C05863	S	3	09/05/20	13:30	X	X	X					X										
7	QA3	C05864	S	3	09/05/21	9:00	X	X	X					X										
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa MAXXAM TASK ORDER #: 1106258 3 IOL CONTACT: Scott Welton	REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: - EDT - email job confirmation - Test samples as per TDG	MAXXAM JOB #: A960760 SAMPLES ENTERED BY: NM/

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	yes				
TEMP 0/0/0	AVG	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/05/22	18:00	Nagla Mikhail	09/05/25	7:40
			NAGLA MIKHAIL		

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	X	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *20 and 21-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A960760*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *29-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31961

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961141
Received: 2009/05/26, 07:35

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	1	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	1	CAM SOP-00408	EPA 6010
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31961

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961141
Received: 2009/05/26, 07:35

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

Encryption Key

Ema Gitej

26 May 2009 16:01:34 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A961141
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO7628	CO7628		
Sampling Date		2009/05/25 15:00	2009/05/25 15:00		
COC Number		31961	31961		
	Units	**SP-4**	**SP-4 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	7.1	6.7	0.2	1826982
Benzene	ug/g	<0.02	<0.02	0.02	1826992
Toluene	ug/g	<0.02	<0.02	0.02	1826992
Ethylbenzene	ug/g	<0.02	<0.02	0.02	1826992
o-Xylene	ug/g	<0.02	<0.02	0.02	1826992
p+m-Xylene	ug/g	<0.04	<0.04	0.04	1826992
Total Xylenes	ug/g	<0.04	<0.04	0.04	1826992
F1 (C6-C10)	ug/g	<10	<10	10	1826992
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	1826992
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	1827006
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	1827006
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1827006
Reached Baseline at C50	ug/g	Yes	Yes		1827006
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	99	100		1826992
o-Terphenyl	%	89	89		1827006
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	102		1826992
4-Bromofluorobenzene	%	102	101		1826992
D4-1,2-Dichloroethane	%	105	105		1826992

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961141
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CO7628		
Sampling Date		2009/05/25 15:00		
COC Number		31961		
	Units	**SP-4**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	5	5	1827134

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961141
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CO7628 **Collected** 2009/05/25
Sample ID SP-4 **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1826992	2009/05/26	2009/05/26	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827006	2009/05/26	2009/05/26	NCI
Total Metals Analysis by ICP	ICP	1827134	2009/05/26	2009/05/26	APT
MOISTURE	BAL	1826982	N/A	2009/05/26	FOT

Maxxam ID CO7628 Dup **Collected** 2009/05/25
Sample ID SP-4 **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1826992	2009/05/26	2009/05/26	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827006	2009/05/26	2009/05/26	NCI
MOISTURE	BAL	1826982	N/A	2009/05/26	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961141
Report Date: 2009/05/26

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A961141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1826992	LRA	Method Blank	1,4-Difluorobenzene	2009/05/26		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/26		100	%	60 - 140
			D10-Ethylbenzene	2009/05/26		97	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/26		104	%	60 - 140
			Benzene	2009/05/26	<0.02		ug/g	
			Toluene	2009/05/26	<0.02		ug/g	
			Ethylbenzene	2009/05/26	<0.02		ug/g	
			o-Xylene	2009/05/26	<0.02		ug/g	
			p+m-Xylene	2009/05/26	<0.04		ug/g	
			Total Xylenes	2009/05/26	<0.04		ug/g	
			F1 (C6-C10)	2009/05/26	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/26	<10		ug/g	
1827006	NCI	Method Blank	o-Terphenyl	2009/05/26		95	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/26	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/26	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/26	<10		ug/g	
1827134	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/26	<5		ug/g	
1826982	MYG	RPD [CO7628-02]	Moisture	2009/05/26	5.8		%	50
1826992	LRA	RPD [CO7628-02]	Benzene	2009/05/26	NC		%	50
			Toluene	2009/05/26	NC		%	50
			Ethylbenzene	2009/05/26	NC		%	50
			o-Xylene	2009/05/26	NC		%	50
			p+m-Xylene	2009/05/26	NC		%	50
			Total Xylenes	2009/05/26	NC		%	50
			F1 (C6-C10)	2009/05/26	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/26	NC		%	50
1827006	NCI	RPD [CO7628-02]	F2 (C10-C16 Hydrocarbons)	2009/05/26	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/26	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/26	NC		%	50
1826992	LRA	MATRIX SPIKE [CO7628-02]	1,4-Difluorobenzene	2009/05/26		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/26		101	%	60 - 140
			D10-Ethylbenzene	2009/05/26		102	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/26		104	%	60 - 140
			Benzene	2009/05/26		93	%	60 - 140
			Toluene	2009/05/26		95	%	60 - 140
			Ethylbenzene	2009/05/26		97	%	60 - 140
			o-Xylene	2009/05/26		95	%	60 - 140
			p+m-Xylene	2009/05/26		93	%	60 - 140
			F1 (C6-C10)	2009/05/26		83	%	60 - 140
1827006	NCI	MATRIX SPIKE [CO7628-02]	o-Terphenyl	2009/05/26		84	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/26		85	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/26		85	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/26		85	%	60 - 130
1826992	LRA	LCS	1,4-Difluorobenzene	2009/05/26		103	%	60 - 140
			4-Bromofluorobenzene	2009/05/26		101	%	60 - 140
			D10-Ethylbenzene	2009/05/26		100	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/26		105	%	60 - 140
			Benzene	2009/05/26		93	%	60 - 140
			Toluene	2009/05/26		92	%	60 - 140
			Ethylbenzene	2009/05/26		93	%	60 - 140
			o-Xylene	2009/05/26		94	%	60 - 140
			p+m-Xylene	2009/05/26		91	%	60 - 140
			F1 (C6-C10)	2009/05/26		85	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A961141

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1827006	NCI	LCS	o-Terphenyl	2009/05/26		84	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/26		82	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/26		82	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/26		82	%	60 - 130
1827134	APT	SRM	Acid Extractable Lead (Pb)	2009/05/26		95	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A961141

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

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 31961

COMPANY NAME: O'CONNOR Associates (OA)
PH #: 613 742 1781
FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9
CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO
PROJECT MANAGER: NANCY Haywood

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	SP-4	C07628	S	3	07/05/25	1500	X	X	X					X										
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave
MAXXAM TASK ORDER #: 11062583
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email jds confirmation
- test samples as per TDG

MAXXAM JOB #: A961141
SAMPLES ENTERED BY: 7L / [signature]

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 1 / 1 / 2°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard (5 days)	☐	Standard (15 days)	☐
Rush (3 days)	☐	Rush (9 days)	☐
(2 days)	☐	(6 days)	☐
(1 day)	☐	(3 days)	☐
(same day)	☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO [signature]	09/05/25	18:30	Jimmy Liu [signature]	09/05/26	7:35

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *25-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A961141*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *27-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31960

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961144
Received: 2009/05/26, 07:35

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31960

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961144
Received: 2009/05/26, 07:35

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

Encryption Key

Ema Gitej

27 May 2009 15:50:20 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A961144
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO7632	CO7632	CO7633		
Sampling Date		2009/05/25 11:30	2009/05/25 11:30	2009/05/25 12:30		
COC Number		31960	31960	31960		
	Units	**EX1-F8-4.0M**	**EX1-F8-4.0M Lab-Dup**	**EX1-F11-4.0M**	**RDL**	**QC Batch**
Moisture	%	17		16	0.2	1827976
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1827730
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1827730
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	1827730
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.02	1827730
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.04	1827730
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.04	1827730
F1 (C6-C10)	ug/g	<10	<10	<10	10	1827730
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1827730
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1827603
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1827603
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1827603
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1827603
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	97	95	94		1827730
o-Terphenyl	%	101	101	103		1827603
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	102	103	102		1827730
4-Bromofluorobenzene	%	101	101	101		1827730
D4-1,2-Dichloroethane	%	106	106	105		1827730

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961144
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO7633	CO7634	CO7635		
Sampling Date		2009/05/25 12:30	2009/05/25 13:00	2009/05/25 11:30		
COC Number		31960	31960	31960		
	Units	**EX1-F11-4.0M Lab-Dup**	**EX1-F15-4.0M**	**EX1-F17-4.0M**	**RDL**	**QC Batch**
Moisture	%	16	19	31	0.2	1827976
Benzene	ug/g		<0.02	<0.02	0.02	1827730
Toluene	ug/g		<0.02	<0.02	0.02	1827730
Ethylbenzene	ug/g		<0.02	<0.02	0.02	1827730
o-Xylene	ug/g		<0.02	<0.02	0.02	1827730
p+m-Xylene	ug/g		<0.04	<0.04	0.04	1827730
Total Xylenes	ug/g		<0.04	<0.04	0.04	1827730
F1 (C6-C10)	ug/g		<10	<10	10	1827730
F1 (C6-C10) - BTEX	ug/g		<10	<10	10	1827730
F2 (C10-C16 Hydrocarbons)	ug/g		<10	<10	10	1827603
F3 (C16-C34 Hydrocarbons)	ug/g		33	<10	10	1827603
F4 (C34-C50 Hydrocarbons)	ug/g		<10	<10	10	1827603
Reached Baseline at C50	ug/g		Yes	Yes		1827603
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%		95	95		1827730
o-Terphenyl	%		94	100		1827603
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%		101	101		1827730
4-Bromofluorobenzene	%		102	101		1827730
D4-1,2-Dichloroethane	%		106	107		1827730

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A961144
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CO7632	CO7632	CO7633		
Sampling Date		2009/05/25 11:30	2009/05/25 11:30	2009/05/25 12:30		
COC Number		31960	31960	31960		
	Units	**EX1-F8-4.0M**	**EX1-F8-4.0M Lab-Dup**	**EX1-F11-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	15	19	14	5	1828421

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CO7634	CO7635		
Sampling Date		2009/05/25 13:00	2009/05/25 11:30		
COC Number		31960	31960		
	Units	**EX1-F15-4.0M**	**EX1-F17-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	12	11	5	1828421

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961144
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CO7632 **Collected** 2009/05/25
Sample ID EX1-F8-4.0M **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1827730	2009/05/26	2009/05/26	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827603	2009/05/26	2009/05/27	ZZ
Total Metals Analysis by ICP	ICP	1828421	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1827976	N/A	2009/05/26	FOT

Maxxam ID CO7632 Dup **Collected** 2009/05/25
Sample ID EX1-F8-4.0M **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1827730	2009/05/26	2009/05/26	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827603	2009/05/26	2009/05/27	ZZ
Total Metals Analysis by ICP	ICP	1828421	2009/05/27	2009/05/27	APT

Maxxam ID CO7633 **Collected** 2009/05/25
Sample ID EX1-F11-4.0M **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1827730	2009/05/26	2009/05/26	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827603	2009/05/26	2009/05/27	ZZ
Total Metals Analysis by ICP	ICP	1828421	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1827976	N/A	2009/05/26	FOT

Maxxam ID CO7633 Dup **Collected** 2009/05/25
Sample ID EX1-F11-4.0M **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	1827976	N/A	2009/05/26	FOT

Maxxam ID CO7634 **Collected** 2009/05/25
Sample ID EX1-F15-4.0M **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1827730	2009/05/26	2009/05/26	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827603	2009/05/26	2009/05/27	ZZ
Total Metals Analysis by ICP	ICP	1828421	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1827976	N/A	2009/05/26	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961144
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CO7635
Sample ID EX1-F17-4.0M
Matrix Soil

Collected 2009/05/25
Shipped 2009/05/25
Received 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1827730	2009/05/26	2009/05/26	LRA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1827603	2009/05/26	2009/05/27	ZZ
Total Metals Analysis by ICP	ICP	1828421	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1827976	N/A	2009/05/26	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961144
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A961144

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1827603	ZZ	Method Blank	o-Terphenyl	2009/05/26		101	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/26	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/26	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/26	<10		ug/g	
1827730	LRA	Method Blank	1,4-Difluorobenzene	2009/05/26		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/26		102	%	60 - 140
			D10-Ethylbenzene	2009/05/26		89	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/26		106	%	60 - 140
			Benzene	2009/05/26	<0.02		ug/g	
			Toluene	2009/05/26	<0.02		ug/g	
			Ethylbenzene	2009/05/26	<0.02		ug/g	
			o-Xylene	2009/05/26	<0.02		ug/g	
			p+m-Xylene	2009/05/26	<0.04		ug/g	
			Total Xylenes	2009/05/26	<0.04		ug/g	
			F1 (C6-C10)	2009/05/26	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/26	<10		ug/g	
1828421	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/27	<5		ug/g	
1827603	ZZ	RPD [CO7632-02]	F2 (C10-C16 Hydrocarbons)	2009/05/27	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/27	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/27	NC		%	50
1827730	LRA	RPD [CO7632-02]	Benzene	2009/05/26	NC		%	50
			Toluene	2009/05/26	NC		%	50
			Ethylbenzene	2009/05/26	NC		%	50
			o-Xylene	2009/05/26	NC		%	50
			p+m-Xylene	2009/05/26	NC		%	50
			Total Xylenes	2009/05/26	NC		%	50
			F1 (C6-C10)	2009/05/26	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/26	NC		%	50
1828421	APT	RPD [CO7632-01]	Acid Extractable Lead (Pb)	2009/05/27	NC		%	35
1827976	LFE	RPD [CO7633-02]	Moisture	2009/05/26	1.9		%	50
1827603	ZZ	MATRIX SPIKE [CO7632-02]	o-Terphenyl	2009/05/26		94	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/26		90	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/26		90	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/26		90	%	60 - 130
1827730	LRA	MATRIX SPIKE [CO7632-02]	1,4-Difluorobenzene	2009/05/26		103	%	60 - 140
			4-Bromofluorobenzene	2009/05/26		102	%	60 - 140
			D10-Ethylbenzene	2009/05/26		100	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/26		105	%	60 - 140
			Benzene	2009/05/26		94	%	60 - 140
			Toluene	2009/05/26		99	%	60 - 140
			Ethylbenzene	2009/05/26		101	%	60 - 140
			o-Xylene	2009/05/26		102	%	60 - 140
			p+m-Xylene	2009/05/26		99	%	60 - 140
			F1 (C6-C10)	2009/05/26		104	%	60 - 140
1828421	APT	MATRIX SPIKE [CO7632-01]	Acid Extractable Lead (Pb)	2009/05/27		102	%	75 - 125
1827603	ZZ	LCS	o-Terphenyl	2009/05/26		88	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/26		88	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/26		88	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/26		88	%	60 - 130
1827730	LRA	LCS	1,4-Difluorobenzene	2009/05/26		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/26		101	%	60 - 140
			D10-Ethylbenzene	2009/05/26		94	%	30 - 130

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A961144

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1827730	LRA	LCS	D4-1,2-Dichloroethane	2009/05/26		106	%	60 - 140
			Benzene	2009/05/26		87	%	60 - 140
			Toluene	2009/05/26		89	%	60 - 140
			Ethylbenzene	2009/05/26		91	%	60 - 140
			o-Xylene	2009/05/26		94	%	60 - 140
			p+m-Xylene	2009/05/26		90	%	60 - 140
			F1 (C6-C10)	2009/05/26		94	%	60 - 140
1828421	APT	SRM	Acid Extractable Lead (Pb)	2009/05/27		94	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A961144

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

CRISTINA NERVO, Scientific Services

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31960

COMPANY NAME: (04)	PH #: 613 742 1781
O'Connor Associates	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518701
SAMPLER NAME (PRINT): Pierre D'Angelo	PROJECT MANAGER: Nancy Haywood

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)					
1	Ex1-F8 -4.0m	C07632	S	3	09/05/25	11:30	X	X	X					X																
2	Ex1-F11-4.0m	C07633	S	3	09/05/25	12:30	X	X	X					X																
3	Ex1-F15-4.0m	C07634	S	3	09/05/25	13:00	X	X	X					X																
4	Ex1-F17-4.0m	C07635	S	3	09/05/25	13:30	X	X	X					X																
5																														
6																														
7																														
8																														
9																														
10																														

IOL SITE LOCATION: 1545 Woodroffe Ave	REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: -EDT -email/job confirmation -test samples as per TOG	MAXXAM JOB #: A961144
MAXXAM TASK ORDER #: 1106283			SAMPLES ENTERED BY: TL
IOL CONTACT: Scott Wetton			

COOLER ID 1	CUSTODY SEAL YES	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 11.1 °C	AVG	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/05/25	18:30	Jimmy Liu	09/05/26	7:35

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☒		(3 days) ☐
	(same day) ☐		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *25-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A961144*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

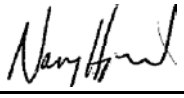
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *27-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31962

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961414
Received: 2009/05/26, 07:35

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	1	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	1	CAM SOP-00408	EPA 6010
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31962

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961414
Received: 2009/05/26, 07:35

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

Encryption Key

Ema Gitej

02 Jun 2009 16:59:19 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A961414
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CO8886	CO8886		
Sampling Date		2009/05/25 16:00	2009/05/25 16:00		
COC Number		31962	31962		
	Units	**SP-3**	**SP-3 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	3.1		0.2	1828489
Benzene	ug/g	<0.02	<0.02	0.02	1831015
Toluene	ug/g	0.12	0.15	0.02	1831015
Ethylbenzene	ug/g	0.04	0.04	0.02	1831015
o-Xylene	ug/g	0.08	0.10	0.02	1831015
p+m-Xylene	ug/g	0.12	0.14	0.04	1831015
Total Xylenes	ug/g	0.19	0.24	0.04	1831015
F1 (C6-C10)	ug/g	<10	16	10	1831015
F1 (C6-C10) - BTEX	ug/g	<10	16	10	1831015
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	1830948
F3 (C16-C34 Hydrocarbons)	ug/g	100	140	10	1830948
F4 (C34-C50 Hydrocarbons)	ug/g	320	520	10	1830948
Reached Baseline at C50	ug/g	No	No		1830948
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	91	89		1831015
o-Terphenyl	%	103	106		1830948
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	101	101		1831015
4-Bromofluorobenzene	%	99	100		1831015
D4-1,2-Dichloroethane	%	98	96		1831015

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961414
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CO8886		
Sampling Date		2009/05/25 16:00		
COC Number		31962		
	Units	**SP-3**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	13	5	1829489

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961414
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		CO8886	CO8886		
Sampling Date		2009/05/25 16:00	2009/05/25 16:00		
COC Number		31962	31962		
	Units	**SP-3**	**SP-3 Lab-Dup**	**RDL**	**QC Batch**
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1000	1400	100	1833614

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961414
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CO8886 **Collected** 2009/05/25
Sample ID SP-3 **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1831015	2009/05/26	2009/05/29	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1830948	2009/05/29	2009/05/30	JKA
F4G (CCME Hydrocarbons Gravimetric)	BAL	1833614	2009/06/01	2009/06/02	DDS
Total Metals Analysis by ICP	ICP	1829489	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1828489	N/A	2009/05/27	AC

Maxxam ID CO8886 Dup **Collected** 2009/05/25
Sample ID SP-3 **Shipped** 2009/05/25
Matrix Soil **Received** 2009/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1831015	2009/05/26	2009/05/29	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1830948	2009/05/29	2009/05/30	JKA
F4G (CCME Hydrocarbons Gravimetric)	BAL	1833614	2009/06/01	2009/06/02	DDS

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961414
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A961414

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1829489	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/28	<5		ug/g	
1830948	JKA	Method Blank	o-Terphenyl	2009/05/29		106	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/29	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/29	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/29	<10		ug/g	
1831015	GBA	Method Blank	1,4-Difluorobenzene	2009/05/29		100	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		100	%	60 - 140
			D10-Ethylbenzene	2009/05/29		89	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/29		97	%	60 - 140
			Benzene	2009/05/29	<0.02		ug/g	
			Toluene	2009/05/29	<0.02		ug/g	
			Ethylbenzene	2009/05/29	<0.02		ug/g	
			o-Xylene	2009/05/29	<0.02		ug/g	
			p+m-Xylene	2009/05/29	<0.04		ug/g	
			Total Xylenes	2009/05/29	<0.04		ug/g	
			F1 (C6-C10)	2009/05/29	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/29	<10		ug/g	
1833614	DDS	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2009/06/02	<100		ug/g	
1830948	JKA	RPD [CO8886-02]	F2 (C10-C16 Hydrocarbons)	2009/05/30	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/30	32.2		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/30	49.0		%	50
1831015	GBA	RPD [CO8886-02]	Benzene	2009/05/29	NC		%	50
			Toluene	2009/05/29	24.3		%	50
			Ethylbenzene	2009/05/29	NC		%	50
			o-Xylene	2009/05/29	NC		%	50
			p+m-Xylene	2009/05/29	NC		%	50
			Total Xylenes	2009/05/29	NC		%	50
			F1 (C6-C10)	2009/05/29	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/29	NC		%	50
1833614	DDS	RPD [CO8886-02]	F4G-sg (Grav. Heavy Hydrocarbons)	2009/06/02	28.6		%	50
1830948	JKA	MATRIX SPIKE [CO8886-02]	o-Terphenyl	2009/06/01		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/01		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/01		96	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/01		96	%	60 - 130
1831015	GBA	MATRIX SPIKE [CO8886-02]	1,4-Difluorobenzene	2009/05/29		100	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		99	%	60 - 140
			D10-Ethylbenzene	2009/05/29		88	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/29		97	%	60 - 140
			Benzene	2009/05/29		78	%	60 - 140
			Toluene	2009/05/29		85	%	60 - 140
			Ethylbenzene	2009/05/29		88	%	60 - 140
			o-Xylene	2009/05/29		92	%	60 - 140
			p+m-Xylene	2009/05/29		87	%	60 - 140
			F1 (C6-C10)	2009/05/29		83	%	60 - 140
1833614	DDS	MATRIX SPIKE [CO8886-02]	F4G-sg (Grav. Heavy Hydrocarbons)	2009/06/02		98	%	65 - 135
1830948	JKA	LCS	o-Terphenyl	2009/06/01		103	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/01		84	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/01		84	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/01		84	%	60 - 130
1831015	GBA	LCS	1,4-Difluorobenzene	2009/05/29		101	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		99	%	60 - 140
			D10-Ethylbenzene	2009/05/29		89	%	30 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A961414

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1831015	GBA	LCS	D4-1,2-Dichloroethane	2009/05/29		97	%	60 - 140
			Benzene	2009/05/29		80	%	60 - 140
			Toluene	2009/05/29		86	%	60 - 140
			Ethylbenzene	2009/05/29		90	%	60 - 140
			o-Xylene	2009/05/29		94	%	60 - 140
			p+m-Xylene	2009/05/29		89	%	60 - 140
			F1 (C6-C10)	2009/05/29		93	%	60 - 140
1833614	DDS	LCS	F4G-sg (Grav. Heavy Hydrocarbons)	2009/06/02		97	%	65 - 135
1829489	APT	SRM	Acid Extractable Lead (Pb)	2009/05/28		100	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

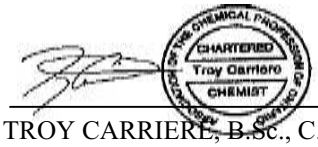
Maxxam Job #: A961414

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons



TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31962

COMPANY NAME: (CA) O'CONNOR Associates	PH #: 613 742 1781
	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #109 Ottawa ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8578701
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYCWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	SP-3	C08886	S	3	09/05/25	1600	X	X	X					X										
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10														-										

IOL SITE LOCATION: 1545 Woodroffe Ave

MAXXAM TASK ORDER #: 1106283

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TOR

MAXXAM JOB #: A961414/JL

SAMRLES ENTERED BY: NM/JL

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	YES	11.2°C	

TURNAROUND TIMES

SOIL/WATER			AIR - SUMMA CANISTERS	
Standard	(5 days)	X	Standard	(15 days) ☐
Rush	(3 days) ☐		Rush	(9 days) ☐
	(2 days) ☐			(6 days) ☐
	(1 day) ☐			(3 days) ☐
	(same day) ☐			

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO PDM	09/05/25	1830	Jimmy Lin	09/05/26	7:35

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *25-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A961414*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *3-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31963

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961835
Received: 2009/05/27, 08:45

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	5	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	5	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	5	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	5	CAM SOP-00408	EPA 6010
MOISTURE	5	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31963

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A961835
Received: 2009/05/27, 08:45

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

Encryption Key

Ema Gitej

27 May 2009 17:20:40 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A961835
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP1025	CP1026	CP1027		
Sampling Date		2009/05/26 10:30	2009/05/26 12:00	2009/05/26 13:00		
COC Number		31963	31963	31963		
	Units	**DISPENSER3-F0.5M**	**EX1-F3-4.5M**	**EX1-F5-4.5M**	**RDL**	**QC Batch**
Moisture	%	4.7	33	32	0.2	1828451
Benzene	ug/g	<0.02	2.6	<0.02	0.02	1828425
Toluene	ug/g	<0.02	12	<0.02	0.02	1828425
Ethylbenzene	ug/g	<0.02	3.4	2.8	0.02	1828425
o-Xylene	ug/g	<0.02	6.9	0.38	0.02	1828425
p+m-Xylene	ug/g	<0.04	18	15	0.04	1828425
Total Xylenes	ug/g	<0.04	25	15	0.04	1828425
F1 (C6-C10)	ug/g	<10	68	48	10	1828425
F1 (C6-C10) - BTEX	ug/g	<10	25	30	10	1828425
F2 (C10-C16 Hydrocarbons)	ug/g	45	25	<10	10	1828427
F3 (C16-C34 Hydrocarbons)	ug/g	410	<10	<10	10	1828427
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1828427
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1828427
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	97	99	93		1828425
o-Terphenyl	%	109	108	95		1828427
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	102	102	101		1828425
4-Bromofluorobenzene	%	103	103	103		1828425
D4-1,2-Dichloroethane	%	99	99	99		1828425

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961835
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP1028		CP1029		
Sampling Date		2009/05/26 13:30		2009/05/26 15:00		
COC Number		31963		31963		
	Units	**SP-5**	**RDL**	**SP-6**	**RDL**	**QC Batch**
Moisture	%	19	0.2	5.7	0.2	1828451
Benzene	ug/g	5.4	0.2	<0.02	0.02	1828425
Toluene	ug/g	150	0.2	0.86	0.02	1828425
Ethylbenzene	ug/g	61	0.2	0.76	0.02	1828425
o-Xylene	ug/g	120	0.2	2.0	0.02	1828425
p+m-Xylene	ug/g	300	0.4	3.9	0.04	1828425
Total Xylenes	ug/g	420	0.4	5.9	0.04	1828425
F1 (C6-C10)	ug/g	2000	100	38	10	1828425
F1 (C6-C10) - BTEX	ug/g	1400	100	30	10	1828425
F2 (C10-C16 Hydrocarbons)	ug/g	1100	10	61	10	1828427
F3 (C16-C34 Hydrocarbons)	ug/g	33	10	14	10	1828427
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1828427
Reached Baseline at C50	ug/g	Yes		Yes		1828427
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	137 (1)		90		1828425
o-Terphenyl	%	92		95		1828427
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	99		103		1828425
4-Bromofluorobenzene	%	105		101		1828425
D4-1,2-Dichloroethane	%	100		95		1828425

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) D10-Ethylbenzene recovery biased due to high level of native hydrocarbon present in sample. Reprocessing of the sample was not possible within the allowed holding time.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961835
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP1029		
Sampling Date		2009/05/26 15:00		
COC Number		31963		
	Units	**SP-6 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	5.1	0.2	1828451
Benzene	ug/g	0.03	0.02	1828425
Toluene	ug/g	1.5 (1)	0.02	1828425
Ethylbenzene	ug/g	1.4 (1)	0.02	1828425
o-Xylene	ug/g	3.7 (1)	0.02	1828425
p+m-Xylene	ug/g	7.0 (1)	0.04	1828425
Total Xylenes	ug/g	11 (1)	0.04	1828425
F1 (C6-C10)	ug/g	70	10	1828425
F1 (C6-C10) - BTEX	ug/g	56	10	1828425
F2 (C10-C16 Hydrocarbons)	ug/g	81	10	1828427
F3 (C16-C34 Hydrocarbons)	ug/g	21	10	1828427
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1828427
Reached Baseline at C50	ug/g	Yes		1828427
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	90		1828425
o-Terphenyl	%	94		1828427
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	103		1828425
4-Bromofluorobenzene	%	101		1828425
D4-1,2-Dichloroethane	%	94		1828425

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch
(1) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961835
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CP1025	CP1025	CP1026		
Sampling Date		2009/05/26 10:30	2009/05/26 10:30	2009/05/26 12:00		
COC Number		31963	31963	31963		
	Units	**DISPENSER3-F0.5M**	**DISPENSER3-F0.5M Lab-Dup**	**EX1-F3-4.5M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	52	42	12	5	1828769

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CP1027	CP1028	CP1029		
Sampling Date		2009/05/26 13:00	2009/05/26 13:30	2009/05/26 15:00		
COC Number		31963	31963	31963		
	Units	**EX1-F5-4.5M**	**SP-5**	**SP-6**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	9	17	11	5	1828769

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961835
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CP1025 **Collected** 2009/05/26
Sample ID DISPENSER3-F0.5M **Shipped** 2009/05/26
Matrix Soil **Received** 2009/05/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1828425	2009/05/27	2009/05/27	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1828427	2009/05/27	2009/05/27	NCI
Total Metals Analysis by ICP	ICP	1828769	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1828451	N/A	2009/05/27	FOT

Maxxam ID CP1025 Dup **Collected** 2009/05/26
Sample ID DISPENSER3-F0.5M **Shipped** 2009/05/26
Matrix Soil **Received** 2009/05/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Metals Analysis by ICP	ICP	1828769	2009/05/27	2009/05/27	APT

Maxxam ID CP1026 **Collected** 2009/05/26
Sample ID EX1-F3-4.5M **Shipped** 2009/05/26
Matrix Soil **Received** 2009/05/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1828425	2009/05/27	2009/05/27	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1828427	2009/05/27	2009/05/27	NCI
Total Metals Analysis by ICP	ICP	1828769	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1828451	N/A	2009/05/27	FOT

Maxxam ID CP1027 **Collected** 2009/05/26
Sample ID EX1-F5-4.5M **Shipped** 2009/05/26
Matrix Soil **Received** 2009/05/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1828425	2009/05/27	2009/05/27	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1828427	2009/05/27	2009/05/27	NCI
Total Metals Analysis by ICP	ICP	1828769	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1828451	N/A	2009/05/27	FOT

Maxxam ID CP1028 **Collected** 2009/05/26
Sample ID SP-5 **Shipped** 2009/05/26
Matrix Soil **Received** 2009/05/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1828425	2009/05/27	2009/05/27	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1828427	2009/05/27	2009/05/27	NCI
Total Metals Analysis by ICP	ICP	1828769	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1828451	N/A	2009/05/27	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961835
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CP1029 **Collected** 2009/05/26
Sample ID SP-6 **Shipped** 2009/05/26
Matrix Soil **Received** 2009/05/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1828425	2009/05/27	2009/05/27	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1828427	2009/05/27	2009/05/27	NCI
Total Metals Analysis by ICP	ICP	1828769	2009/05/27	2009/05/27	APT
MOISTURE	BAL	1828451	N/A	2009/05/27	FOT

Maxxam ID CP1029 Dup **Collected** 2009/05/26
Sample ID SP-6 **Shipped** 2009/05/26
Matrix Soil **Received** 2009/05/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1828425	2009/05/27	2009/05/27	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1828427	2009/05/27	2009/05/27	NCI
MOISTURE	BAL	1828451	N/A	2009/05/27	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A961835
Report Date: 2009/05/27

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	3.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A961835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1828425	MSB	Method Blank	1,4-Difluorobenzene	2009/05/27		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/27		99	%	60 - 140
			D10-Ethylbenzene	2009/05/27		88	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/27		97	%	60 - 140
			Benzene	2009/05/27	<0.02		ug/g	
			Toluene	2009/05/27	<0.02		ug/g	
			Ethylbenzene	2009/05/27	<0.02		ug/g	
			o-Xylene	2009/05/27	<0.02		ug/g	
			p+m-Xylene	2009/05/27	<0.04		ug/g	
			Total Xylenes	2009/05/27	<0.04		ug/g	
			F1 (C6-C10)	2009/05/27	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/27	<10		ug/g	
1828427	NCI	Method Blank	o-Terphenyl	2009/05/27		114	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/27	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/27	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/27	<10		ug/g	
1828769	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/27	<5		ug/g	
		RPD [CP1025-01]	Acid Extractable Lead (Pb)	2009/05/27	20.9		%	35
1828425	MSB	RPD [CP1029-02]	Benzene	2009/05/27	NC		%	50
			Toluene	2009/05/27	55.4 (1)		%	50
			Ethylbenzene	2009/05/27	60.5 (1)		%	50
			o-Xylene	2009/05/27	57.3 (1)		%	50
			p+m-Xylene	2009/05/27	57.3 (1)		%	50
			Total Xylenes	2009/05/27	57.3 (1)		%	50
			F1 (C6-C10)	2009/05/27	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/27	NC		%	50
1828427	NCI	RPD [CP1029-02]	F2 (C10-C16 Hydrocarbons)	2009/05/27	27.7		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/27	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/27	NC		%	50
1828451	MYG	RPD [CP1029-02]	Moisture	2009/05/27	11.1		%	50
1828425	MSB	MATRIX SPIKE [CP1029-02]	1,4-Difluorobenzene	2009/05/27		104	%	60 - 140
			4-Bromofluorobenzene	2009/05/27		101	%	60 - 140
			D10-Ethylbenzene	2009/05/27		92	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/27		95	%	60 - 140
			Benzene	2009/05/27		92	%	60 - 140
			Toluene	2009/05/27		112	%	60 - 140
			Ethylbenzene	2009/05/27		NC (2)	%	60 - 140
			o-Xylene	2009/05/27		NC (2)	%	60 - 140
			p+m-Xylene	2009/05/27		NC (2)	%	60 - 140
			F1 (C6-C10)	2009/05/27		NC (2)	%	60 - 140
1828427	NCI	MATRIX SPIKE [CP1029-02]	o-Terphenyl	2009/05/27		95	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/27		88	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/27		88	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/27		88	%	60 - 130
1828769	APT	MATRIX SPIKE [CP1025-01]	Acid Extractable Lead (Pb)	2009/05/27		82	%	75 - 125
1828425	MSB	LCS	1,4-Difluorobenzene	2009/05/27		102	%	60 - 140
			4-Bromofluorobenzene	2009/05/27		100	%	60 - 140
			D10-Ethylbenzene	2009/05/27		90	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/27		95	%	60 - 140
			Benzene	2009/05/27		90	%	60 - 140
			Toluene	2009/05/27		93	%	60 - 140
			Ethylbenzene	2009/05/27		99	%	60 - 140

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A961835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1828425	MSB	LCS	o-Xylene	2009/05/27		102	%	60 - 140
			p+m-Xylene	2009/05/27		97	%	60 - 140
			F1 (C6-C10)	2009/05/27		107	%	60 - 140
1828427	NCI	LCS	o-Terphenyl	2009/05/27		98	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/27		90	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/27		90	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/27		90	%	60 - 130
1828769	APT	SRM	Acid Extractable Lead (Pb)	2009/05/27		98	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
(1) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.
(2) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2009/05/27 5:11 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton

Report To Client Name: O'Connor Associates Environmental In
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T01
Task #: 11062583
Quote: A85084
COC/Submission #: 31963

TAT: 0 Days
Rush: Yes

Maxxam Job #: A961835

Received By: JIMMY LIU
Received: 2009/05/27 08:45

DQW #: 615
DQW Created By: EMA GITEJ
DQW Created: 2009/05/27 15:19

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CP1028	SP-5	Soil	F1BTEXHS-S	F1BTEX	D10-Ethylbenzene	#5 Surrogate Recovery Above Control Limit	#15 No Repeat-Past Hold Time	This may increase the uncertainty associated with these results.
CP1029	SP-6	Soil	F1BTEXHS-S	F1BTEX	Ethylbenzene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CP1029	SP-6	Soil	F1BTEXHS-S	F1BTEX	o-Xylene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CP1029	SP-6	Soil	F1BTEXHS-S	F1BTEX	p+m-Xylene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CP1029	SP-6	Soil	F1BTEXHS-S	F1BTEX	Toluene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CP1029	SP-6	Soil	F1BTEXHS-S	F1BTEX	Total Xylenes	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej Date: 2009/05/27 17:03
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature: Nancy Haywood Date: 2009/05/28
Name: NANCY HAYWOOD
Title: Project Manager

Data Quality Waiver Reviewed and Declined By:
Signature: _____ Date: _____
Name: _____
Title: _____

Comments / Requested Actions: _____

If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

Validation Signature Page

Maxxam Job #: A961835

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

EWA PRANJIC, M.Sc., C.Chem, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31963

COMPANY NAME: (OA)	PH #: 613 742 1781
O'CONNOR Associates	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): Pierre D'ANGELO	PROJECT MANAGER: NANCY MAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Dispenser 3-F0.5m	CP1025	S	3	09/05/26	1030	X	X	X					X										
2	EX-F3 -4.5m	CP1026	S	3	09/05/26	1200	X	X	X					X										
3	EX-F5 - 4.5m	CP1027	S	3	09/05/26	1300	X	X	X					X										
4	SP-5	CP1028	S	3	09/05/26	1330	X	X	X					X										
5	SP-6	CP1029	S	3	09/05/26	1500	X	X	X					X										
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 1106258 3

IOL CONTACT: Scott Welton

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test sample as per TDG

MAXXAM JOB #: A961835

SAMPLES ENTERED BY: ZL | KD

COOLER ID 1	CUSTODY SEAL Yes	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 4/3/3C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
Pierre D'ANGELO	09/05/26	1830	HS	09/05/27	08:45
			HIRAL SONI		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *26-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A961835*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The extraction surrogate recovery for D10-Ethylbenznene was 137% which is outside the QC limit (30-130%). The toluene, ethylbenzene and total xylenes duplicate RPD results (55, 60 and 57%) exceed acceptance criteria (50%). Recovery in the matrix spike was not calculated, spike level <2 X native concentration. All other lab QC have met acceptance criteria.*
Extraction Surrogate Recovery		*X*		
Method Blank Concentration	*X*			
Matrix Duplicate RPD		*X*		
Matrix Spike Recovery		*X*		
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

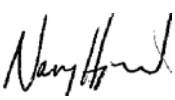
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *27-May-09* Date of Response: *28-May-09*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *28-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31966

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A962571
Received: 2009/05/28, 07:34

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31966

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/05/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A962571
Received: 2009/05/28, 07:34

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

Encryption Key

Ema Gitej

28 May 2009 16:17:42 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A962571
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP4113	CP4114	CP4115		
Sampling Date		2009/05/27 13:30	2009/05/27 13:45	2009/05/27 14:30		
COC Number		31966	31966	31966		
	Units	**EX1-F8-4.5M**	**EX1-F8-4.7M**	**EX1-F8-4.8M**	**RDL**	**QC Batch**
Moisture	%	38	31	3.7	0.2	1829719
Benzene	ug/g	0.08	<0.02	<0.02	0.02	1829700
Toluene	ug/g	0.09	0.22	<0.02	0.02	1829700
Ethylbenzene	ug/g	3.7	2.5	0.04	0.02	1829700
o-Xylene	ug/g	0.12	0.21	<0.02	0.02	1829700
p+m-Xylene	ug/g	5.7	4.4	0.05	0.04	1829700
Total Xylenes	ug/g	5.8	4.6	0.05	0.04	1829700
F1 (C6-C10)	ug/g	54	36	<10	10	1829700
F1 (C6-C10) - BTEX	ug/g	45	28	<10	10	1829700
F2 (C10-C16 Hydrocarbons)	ug/g	27	<10	<10	10	1829726
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1829726
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1829726
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1829726
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	97	91	96		1829700
o-Terphenyl	%	107	98	90		1829726
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	99	101		1829700
4-Bromofluorobenzene	%	100	100	99		1829700
D4-1,2-Dichloroethane	%	98	99	98		1829700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A962571
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP4115	CP4116	CP4116		
Sampling Date		2009/05/27 14:30	2009/05/27 14:45	2009/05/27 14:45		
COC Number		31966	31966	31966		
	Units	**EX1-F8-4.8M Lab-Dup**	**EX1-F8-5.0M**	**EX1-F8-5.0M Lab-Dup**	**RDL**	**QC Batch**
Moisture	%		3.0	3.0	0.2	1829719
Benzene	ug/g	<0.02	<0.02		0.02	1829700
Toluene	ug/g	<0.02	<0.02		0.02	1829700
Ethylbenzene	ug/g	0.04	0.03		0.02	1829700
o-Xylene	ug/g	<0.02	<0.02		0.02	1829700
p+m-Xylene	ug/g	0.06	0.05		0.04	1829700
Total Xylenes	ug/g	0.06	0.05		0.04	1829700
F1 (C6-C10)	ug/g	<10	<10		10	1829700
F1 (C6-C10) - BTEX	ug/g	<10	<10		10	1829700
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10		10	1829726
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10		10	1829726
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10		10	1829726
Reached Baseline at C50	ug/g	Yes	Yes			1829726
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	91	88			1829700
o-Terphenyl	%	92	99			1829726
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	100			1829700
4-Bromofluorobenzene	%	100	99			1829700
D4-1,2-Dichloroethane	%	99	99			1829700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A962571
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CP4113	CP4114	CP4114		
Sampling Date		2009/05/27 13:30	2009/05/27 13:45	2009/05/27 13:45		
COC Number		31966	31966	31966		
	Units	**EX1-F8-4.5M**	**EX1-F8-4.7M**	**EX1-F8-4.7M Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	7	7	7	5	1829893

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CP4115	CP4116		
Sampling Date		2009/05/27 14:30	2009/05/27 14:45		
COC Number		31966	31966		
	Units	**EX1-F8-4.8M**	**EX1-F8-5.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	5	<5	5	1829893

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A962571
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CP4113 **Collected** 2009/05/27
Sample ID EX1-F8-4.5M **Shipped** 2009/05/27
Matrix Soil **Received** 2009/05/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829700	2009/05/28	2009/05/28	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829726	2009/05/28	2009/05/28	RGA
Total Metals Analysis by ICP	ICP	1829893	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1829719	N/A	2009/05/28	FOT

Maxxam ID CP4114 **Collected** 2009/05/27
Sample ID EX1-F8-4.7M **Shipped** 2009/05/27
Matrix Soil **Received** 2009/05/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829700	2009/05/28	2009/05/28	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829726	2009/05/28	2009/05/28	RGA
Total Metals Analysis by ICP	ICP	1829893	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1829719	N/A	2009/05/28	FOT

Maxxam ID CP4114 Dup **Collected** 2009/05/27
Sample ID EX1-F8-4.7M **Shipped** 2009/05/27
Matrix Soil **Received** 2009/05/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Metals Analysis by ICP	ICP	1829893	2009/05/28	2009/05/28	APT

Maxxam ID CP4115 **Collected** 2009/05/27
Sample ID EX1-F8-4.8M **Shipped** 2009/05/27
Matrix Soil **Received** 2009/05/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829700	2009/05/28	2009/05/28	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829726	2009/05/28	2009/05/28	RGA
Total Metals Analysis by ICP	ICP	1829893	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1829719	N/A	2009/05/28	FOT

Maxxam ID CP4115 Dup **Collected** 2009/05/27
Sample ID EX1-F8-4.8M **Shipped** 2009/05/27
Matrix Soil **Received** 2009/05/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829700	2009/05/28	2009/05/28	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829726	2009/05/28	2009/05/28	RGA

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A962571
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CP4116 **Collected** 2009/05/27
Sample ID EX1-F8-5.0M **Shipped** 2009/05/27
Matrix Soil **Received** 2009/05/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1829700	2009/05/28	2009/05/28	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1829726	2009/05/28	2009/05/28	RGA
Total Metals Analysis by ICP	ICP	1829893	2009/05/28	2009/05/28	APT
MOISTURE	BAL	1829719	N/A	2009/05/28	FOT

Maxxam ID CP4116 Dup **Collected** 2009/05/27
Sample ID EX1-F8-5.0M **Shipped** 2009/05/27
Matrix Soil **Received** 2009/05/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	1829719	N/A	2009/05/28	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A962571
Report Date: 2009/05/28

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A962571

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1829700	GBA	Method Blank	1,4-Difluorobenzene	2009/05/28		101	%	60 - 140
			4-Bromofluorobenzene	2009/05/28		99	%	60 - 140
			D10-Ethylbenzene	2009/05/28		90	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/28		98	%	60 - 140
			Benzene	2009/05/28	<0.02		ug/g	
			Toluene	2009/05/28	<0.02		ug/g	
			Ethylbenzene	2009/05/28	<0.02		ug/g	
			o-Xylene	2009/05/28	<0.02		ug/g	
			p+m-Xylene	2009/05/28	<0.04		ug/g	
			Total Xylenes	2009/05/28	<0.04		ug/g	
			F1 (C6-C10)	2009/05/28	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/28	<10		ug/g	
1829726	RGA	Method Blank	o-Terphenyl	2009/05/28		105	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/28	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/28	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/28	<10		ug/g	
1829893	APT	Method Blank	Acid Extractable Lead (Pb)	2009/05/28	<5		ug/g	
		RPD [CP4114-01]	Acid Extractable Lead (Pb)	2009/05/28	NC		%	35
1829700	GBA	RPD [CP4115-02]	Benzene	2009/05/28	NC		%	50
			Toluene	2009/05/28	NC		%	50
			Ethylbenzene	2009/05/28	NC		%	50
			o-Xylene	2009/05/28	NC		%	50
			p+m-Xylene	2009/05/28	NC		%	50
			Total Xylenes	2009/05/28	NC		%	50
			F1 (C6-C10)	2009/05/28	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/28	NC		%	50
1829726	RGA	RPD [CP4115-02]	F2 (C10-C16 Hydrocarbons)	2009/05/28	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/28	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/28	NC		%	50
1829719	MYG	RPD [CP4116-02]	Moisture	2009/05/28	0		%	50
1829700	GBA	MATRIX SPIKE [CP4115-02]	1,4-Difluorobenzene	2009/05/28		100	%	60 - 140
			4-Bromofluorobenzene	2009/05/28		100	%	60 - 140
			D10-Ethylbenzene	2009/05/28		90	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/28		100	%	60 - 140
			Benzene	2009/05/28		77	%	60 - 140
			Toluene	2009/05/28		81	%	60 - 140
			Ethylbenzene	2009/05/28		84	%	60 - 140
			o-Xylene	2009/05/28		89	%	60 - 140
			p+m-Xylene	2009/05/28		83	%	60 - 140
			F1 (C6-C10)	2009/05/28		115	%	60 - 140
1829726	RGA	MATRIX SPIKE [CP4115-02]	o-Terphenyl	2009/05/28		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/28		80	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/28		80	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/28		80	%	60 - 130
1829893	APT	MATRIX SPIKE [CP4114-01]	Acid Extractable Lead (Pb)	2009/05/28		110	%	75 - 125
1829700	GBA	LCS	1,4-Difluorobenzene	2009/05/28		100	%	60 - 140
			4-Bromofluorobenzene	2009/05/28		100	%	60 - 140
			D10-Ethylbenzene	2009/05/28		95	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/28		100	%	60 - 140
			Benzene	2009/05/28		81	%	60 - 140
			Toluene	2009/05/28		86	%	60 - 140
			Ethylbenzene	2009/05/28		91	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A962571

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1829700	GBA	LCS	o-Xylene	2009/05/28		95	%	60 - 140
			p+m-Xylene	2009/05/28		90	%	60 - 140
			F1 (C6-C10)	2009/05/28		100	%	60 - 140
1829726	RGA	LCS	o-Terphenyl	2009/05/28		87	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/28		77	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/28		77	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/28		77	%	60 - 130
1829893	APT	SRM	Acid Extractable Lead (Pb)	2009/05/28		95	%	75 - 125

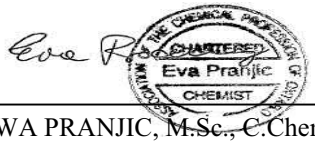
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A962571

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



EWA PRANJIC, M.Sc., C.Chem, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31966

COMPANY NAME: (OA) O'Connor Associates
PH #: 613 742 1781
FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9
CLIENT PROJECT ID: (#) 10-8518 TOT
SAMPLER NAME (PRINT): PIERRE D'ANGELO
PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex1-F8-4.5m	cp4113	S	3	09/05/27	1330	X	X	X					X										
2	Ex1-F8 – 4.7m	cp4114	S	3	09/05/27	1345	X	X	X					X										
3	Ex1-F8-4.8m	cp4115	S	3	09/05/27	1430	X	X	X					X										
4	Ex1-F8-5.0m	cp4116	S	3	09/05/27	1445	X	X	X					X										
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa
MAXXAM TASK ORDER #: 1106583
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- hst samples as per TOC

MAXXAM JOB #: A962571
SAMPLES ENTERED BY: TL / KG

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	YES	2/2/2°C	

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
Pierre D'Angelo	09/05/27	18:45	Jimmy Liu	09/05/28	7:34

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *27-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A962571*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *29-May-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31970

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A963819
Received: 2009/05/29, 15:15

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	3	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	3	CAM SOP-00408	EPA 6010
MOISTURE	3	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31970

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A963819
Received: 2009/05/29, 15:15

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

Encryption Key

Ema Gitej

02 Jun 2009 12:37:29 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A963819
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP9937		CP9938		
Sampling Date		2009/05/28 12:45		2009/05/28 13:00		
COC Number		31970		31970		
	Units	**EX1-SW7-4.0M**	**RDL**	**EX1-WW1-3.0M**	**RDL**	**QC Batch**
Moisture	%	36	0.2	6.4	0.2	1832413
Benzene	ug/g	1.1	0.02	<0.2	0.2	1832345
Toluene	ug/g	11	0.02	0.9	0.2	1832345
Ethylbenzene	ug/g	6.5	0.02	3.2	0.2	1832345
o-Xylene	ug/g	15	0.02	29	0.2	1832345
p+m-Xylene	ug/g	33	0.04	56	0.4	1832345
Total Xylenes	ug/g	47	0.04	85	0.4	1832345
F1 (C6-C10)	ug/g	180	10	590	100	1832345
F1 (C6-C10) - BTEX	ug/g	120	10	500	100	1832345
F2 (C10-C16 Hydrocarbons)	ug/g	52	10	1100	10	1832379
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	86	10	1832379
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1832379
Reached Baseline at C50	ug/g	Yes		Yes		1832379
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	113		130 (1)		1832345
o-Terphenyl	%	98		96		1832379
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	110		106		1832345
4-Bromofluorobenzene	%	103		101		1832345
D4-1,2-Dichloroethane	%	102		100		1832345

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) D10-Ethylbenzene recovery biased due to high level of native hydrocarbon present in sample. Reprocessing of the sample was not possible within the allowed holding time.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963819
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP9939		
Sampling Date		2009/05/28 13:15		
COC Number		31970		
	Units	**EX1-WW4-3.0M**	**RDL**	**QC Batch**
Moisture	%	29	0.2	1832413
Benzene	ug/g	2.3	0.02	1832345
Toluene	ug/g	16	0.02	1832345
Ethylbenzene	ug/g	18	0.02	1832345
o-Xylene	ug/g	24	0.02	1832345
p+m-Xylene	ug/g	46	0.04	1832345
Total Xylenes	ug/g	70	0.04	1832345
F1 (C6-C10)	ug/g	410	10	1832345
F1 (C6-C10) - BTEX	ug/g	310	10	1832345
F2 (C10-C16 Hydrocarbons)	ug/g	62	10	1832379
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1832379
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1832379
Reached Baseline at C50	ug/g	Yes		1832379
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	114		1832345
o-Terphenyl	%	97		1832379
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	105		1832345
4-Bromofluorobenzene	%	97		1832345
D4-1,2-Dichloroethane	%	106		1832345

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963819
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CP9937		CP9938		
Sampling Date		2009/05/28 12:45		2009/05/28 13:00		
COC Number		31970		31970		
	Units	**EX1-SW7-4.0M**	**QC Batch**	**EX1-WW1-3.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	12	1832862	15	5	1832863

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CP9939		
Sampling Date		2009/05/28 13:15		
COC Number		31970		
	Units	**EX1-WW4-3.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	6	5	1832862

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963819
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CP9937 **Collected** 2009/05/28
Sample ID EX1-SW7-4.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832345	2009/05/29	2009/05/30	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832379	2009/05/29	2009/05/31	ZZ
Total Metals Analysis by ICP	ICP	1832862	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832413	N/A	2009/05/22	AC

Maxxam ID CP9938 **Collected** 2009/05/28
Sample ID EX1-WW1-3.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832345	2009/05/29	2009/05/30	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832379	2009/05/29	2009/05/31	ZZ
Total Metals Analysis by ICP	ICP	1832863	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832413	N/A	2009/05/22	AC

Maxxam ID CP9939 **Collected** 2009/05/28
Sample ID EX1-WW4-3.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832345	2009/05/29	2009/05/30	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832379	2009/05/29	2009/05/31	ZZ
Total Metals Analysis by ICP	ICP	1832862	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832413	N/A	2009/05/22	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963819
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample CP9938-01: F1-BTEX Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A963819

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1832345	GRU	Method Blank	1,4-Difluorobenzene	2009/05/29		100	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		101	%	60 - 140
			D10-Ethylbenzene	2009/05/29		104	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/29		97	%	60 - 140
			Benzene	2009/05/29	<0.02		ug/g	
			Toluene	2009/05/29	<0.02		ug/g	
			Ethylbenzene	2009/05/29	<0.02		ug/g	
			o-Xylene	2009/05/29	<0.02		ug/g	
			p+m-Xylene	2009/05/29	<0.04		ug/g	
			Total Xylenes	2009/05/29	<0.04		ug/g	
			F1 (C6-C10)	2009/05/29	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/29	<10		ug/g	
1832379	ZZ	Method Blank	o-Terphenyl	2009/05/30		96	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/30	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/30	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/30	<10		ug/g	
1832862	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/01	<5		ug/g	
1832863	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/01	<5		ug/g	
1832345	GRU	LCS	1,4-Difluorobenzene	2009/05/29		106	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		106	%	60 - 140
			D10-Ethylbenzene	2009/05/29		114	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/29		105	%	60 - 140
			Benzene	2009/05/29		87	%	60 - 140
			Toluene	2009/05/29		97	%	60 - 140
			Ethylbenzene	2009/05/29		104	%	60 - 140
			o-Xylene	2009/05/29		104	%	60 - 140
			p+m-Xylene	2009/05/29		101	%	60 - 140
			F1 (C6-C10)	2009/05/29		88	%	60 - 140
1832379	ZZ	LCS	o-Terphenyl	2009/05/31		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/31		75	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/31		75	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/31		75	%	60 - 130
1832862	APT	SRM	Acid Extractable Lead (Pb)	2009/06/01		94	%	75 - 125
1832863	APT	SRM	Acid Extractable Lead (Pb)	2009/06/01		94	%	75 - 125

QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2009/06/02 12:19 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T01
Task #: 11062583
Quote: A85084
COC/Submission #: 31970
TAT: 4 Days
Rush: Yes

Maxxam Job #: A963819
Received By: MARK FERRER
Received: 2009/05/29 15:15
DQW #: 619
DQW Created By: EMA GITEJ
DQW Created: 2009/06/01 11:47

Report To Client Name: O'Connor Associates Environmental In
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CP9938	EX1-WW1-3.0M	Soil	F1BTEXHS-S	F1BTEX	D10-Ethylbenzene	#5 Surrogate Recovery Above Control Limit	#15 No Repeat-Past Hold Time	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej Date: 2009/06/01 11:48
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature: Nancy Hyn Date: 2009/06/01
Name: NANCY HAYWOOD
Title: Project Manager

Data Quality Waiver Reviewed and Declined By:
Signature: _____ Date: _____
Name: _____
Title: _____

Comments / Requested Actions: _____

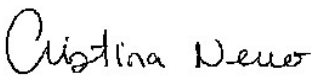
If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

Validation Signature Page

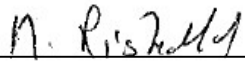
Maxxam Job #: A963819

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

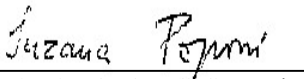
BRAD NEWMAN, Scientific Specialist



CRISTINA NERVO, Scientific Services



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31970

COMPANY NAME: (CA)	PH #: 613 742 1781
O'Connor Associates	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518-T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex1-SW7-4.0m	CP9937	S	3	09/05/28	1245	X	X	X					X										
2	Ex1-WW1-3.0m	CP9938	S	3	09/05/28	1300	X	X	X					X										
3	Ex1-WW4-3.0m	CP9939	S	3	09/05/28	1315	X	X	X					X										
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 1106 2583

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS: EDT email job confirmation ksf samples as per TDG

MAXXAM JOB #: A963919

SAMPLES ENTERED BY: MT/TC

COOLER ID	1	CUSTODY SEAL	YES
TEMP	2/2/2°C	AVG	

COOLER ID		CUSTODY SEAL	
TEMP		AVG	

COOLER ID		CUSTODY SEAL	
TEMP		AVG	

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☒		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO PDA	09/05/28	19:30	Ashitha Sukumar	09/05/29	15:15
			ASHITHA SUKUMAR		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *28-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A963819*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The extraction surrogate recovery for D10-Ethylbenznene was 130% which is at the upper QC limit (130%). All other lab QC have met acceptance criteria.*
Extraction Surrogate Recovery		*X*		
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

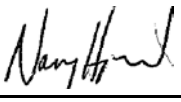
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *1-Jun-09* Date of Response: *1-Jun-09*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *2-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31965

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/01

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A963823
Received: 2009/05/29, 15:15

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	3	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	3	CAM SOP-00408	EPA 6010
MOISTURE	3	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31965

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/01

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A963823
Received: 2009/05/29, 15:15

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

Encryption Key

Ema Gitej

01 Jun 2009 13:52:38 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A963823
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP9958	CP9959	CP9959		
Sampling Date		2009/05/28 11:00	2009/05/28 11:30	2009/05/28 11:30		
COC Number		31965	31965	31965		
	Units	**SP-7**	**SP-8**	**SP-8 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	16	7.1		0.2	1832413
Benzene	ug/g	1.9	<0.02	<0.02	0.02	1832345
Toluene	ug/g	8.8	<0.02	<0.02	0.02	1832345
Ethylbenzene	ug/g	9.1	<0.02	<0.02	0.02	1832345
o-Xylene	ug/g	15	0.04	0.04	0.02	1832345
p+m-Xylene	ug/g	34	0.06	0.05	0.04	1832345
Total Xylenes	ug/g	50	0.11	0.09	0.04	1832345
F1 (C6-C10)	ug/g	250	<10	<10	10	1832345
F1 (C6-C10) - BTEX	ug/g	180	<10	<10	10	1832345
F2 (C10-C16 Hydrocarbons)	ug/g	48	<10	<10	10	1832379
F3 (C16-C34 Hydrocarbons)	ug/g	13	<10	<10	10	1832379
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1832379
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1832379
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	116	118	114		1832345
o-Terphenyl	%	90	86	91		1832379
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	107	103	106		1832345
4-Bromofluorobenzene	%	105	98	104		1832345
D4-1,2-Dichloroethane	%	104	98	98		1832345

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963823
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CP9960	CP9960		
Sampling Date		2009/05/28 12:00	2009/05/28 12:00		
COC Number		31965	31965		
	Units	**EX1-F19-4.0M**	**EX1-F19-4.0M Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	24	24	0.2	1832413
Benzene	ug/g	0.64		0.05	1832345
Toluene	ug/g	20		0.05	1832345
Ethylbenzene	ug/g	22		0.05	1832345
o-Xylene	ug/g	54		0.05	1832345
p+m-Xylene	ug/g	110		0.1	1832345
Total Xylenes	ug/g	160		0.1	1832345
F1 (C6-C10)	ug/g	850		30	1832345
F1 (C6-C10) - BTEX	ug/g	640		30	1832345
F2 (C10-C16 Hydrocarbons)	ug/g	150		10	1832379
F3 (C16-C34 Hydrocarbons)	ug/g	15		10	1832379
F4 (C34-C50 Hydrocarbons)	ug/g	<10		10	1832379
Reached Baseline at C50	ug/g	Yes			1832379
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	143 (1)			1832345
o-Terphenyl	%	94			1832379
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	107			1832345
4-Bromofluorobenzene	%	106			1832345
D4-1,2-Dichloroethane	%	113			1832345

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) D10-Ethylbenzene recovery biased due to high level of native hydrocarbon present in sample. Reprocessing of the sample was not possible within the allowed holding time.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963823
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CP9958	CP9959	CP9959		
Sampling Date		2009/05/28 11:00	2009/05/28 11:30	2009/05/28 11:30		
COC Number		31965	31965	31965		
	Units	**SP-7**	**SP-8**	**SP-8 Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	9	<5	6	5	1832863

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam ID		CP9960		
Sampling Date		2009/05/28 12:00		
COC Number		31965		
	Units	**EX1-F19-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	11	5	1832863

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963823
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CP9958 **Collected** 2009/05/28
Sample ID SP-7 **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832345	2009/05/29	2009/05/30	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832379	2009/05/29	2009/05/31	ZZ
Total Metals Analysis by ICP	ICP	1832863	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832413	N/A	2009/05/22	AC

Maxxam ID CP9959 **Collected** 2009/05/28
Sample ID SP-8 **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832345	2009/05/29	2009/05/29	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832379	2009/05/29	2009/05/31	ZZ
Total Metals Analysis by ICP	ICP	1832863	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832413	N/A	2009/05/22	AC

Maxxam ID CP9959 Dup **Collected** 2009/05/28
Sample ID SP-8 **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832345	2009/05/29	2009/05/29	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832379	2009/05/29	2009/05/31	ZZ
Total Metals Analysis by ICP	ICP	1832863	2009/06/01	2009/06/01	APT

Maxxam ID CP9960 **Collected** 2009/05/28
Sample ID EX1-F19-4.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832345	2009/05/29	2009/06/01	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832379	2009/05/29	2009/05/31	ZZ
Total Metals Analysis by ICP	ICP	1832863	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832413	N/A	2009/05/22	AC

Maxxam ID CP9960 Dup **Collected** 2009/05/28
Sample ID EX1-F19-4.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	1832413	N/A	2009/05/22	AC

Maxxam Job #: A963823
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A963823

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1832345	GRU	Method Blank	1,4-Difluorobenzene	2009/05/29		100	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		101	%	60 - 140
			D10-Ethylbenzene	2009/05/29		104	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/29		97	%	60 - 140
			Benzene	2009/05/29	<0.02		ug/g	
			Toluene	2009/05/29	<0.02		ug/g	
			Ethylbenzene	2009/05/29	<0.02		ug/g	
			o-Xylene	2009/05/29	<0.02		ug/g	
			p+m-Xylene	2009/05/29	<0.04		ug/g	
			Total Xylenes	2009/05/29	<0.04		ug/g	
			F1 (C6-C10)	2009/05/29	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/29	<10		ug/g	
1832379	ZZ	Method Blank	o-Terphenyl	2009/05/30		96	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/30	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/30	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/30	<10		ug/g	
1832863	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/01	<5		ug/g	
1832345	GRU	RPD [CP9959-01]	Benzene	2009/05/29	NC		%	50
			Toluene	2009/05/29	NC		%	50
			Ethylbenzene	2009/05/29	NC		%	50
			o-Xylene	2009/05/29	NC		%	50
			p+m-Xylene	2009/05/29	NC		%	50
			Total Xylenes	2009/05/29	NC		%	50
			F1 (C6-C10)	2009/05/29	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/29	NC		%	50
1832379	ZZ	RPD [CP9959-01]	F2 (C10-C16 Hydrocarbons)	2009/05/31	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/05/31	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/05/31	NC		%	50
1832863	APT	RPD [CP9959-03]	Acid Extractable Lead (Pb)	2009/06/01	NC		%	35
1832413	C_A	RPD [CP9960-01]	Moisture	2009/05/22	2.1		%	50
1832345	GRU	MATRIX SPIKE [CP9959-01]	1,4-Difluorobenzene	2009/05/29		104	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		102	%	60 - 140
			D10-Ethylbenzene	2009/05/29		120	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/29		101	%	60 - 140
			Benzene	2009/05/29		92	%	60 - 140
			Toluene	2009/05/29		101	%	60 - 140
			Ethylbenzene	2009/05/29		108	%	60 - 140
			o-Xylene	2009/05/29		111	%	60 - 140
			p+m-Xylene	2009/05/29		102	%	60 - 140
			F1 (C6-C10)	2009/05/29		98	%	60 - 140
1832379	ZZ	MATRIX SPIKE [CP9959-01]	o-Terphenyl	2009/05/31		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/31		81	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/31		81	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/31		81	%	60 - 130
1832863	APT	MATRIX SPIKE [CP9959-03]	Acid Extractable Lead (Pb)	2009/06/01		105	%	75 - 125
1832345	GRU	LCS	1,4-Difluorobenzene	2009/05/29		106	%	60 - 140
			4-Bromofluorobenzene	2009/05/29		106	%	60 - 140
			D10-Ethylbenzene	2009/05/29		114	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/29		105	%	60 - 140
			Benzene	2009/05/29		87	%	60 - 140
			Toluene	2009/05/29		97	%	60 - 140
			Ethylbenzene	2009/05/29		104	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A963823

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1832345	GRU	LCS	o-Xylene	2009/05/29		104	%	60 - 140
			p+m-Xylene	2009/05/29		101	%	60 - 140
			F1 (C6-C10)	2009/05/29		88	%	60 - 140
1832379	ZZ	LCS	o-Terphenyl	2009/05/31		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/31		75	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/05/31		75	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/05/31		75	%	60 - 130
1832863	APT	SRM	Acid Extractable Lead (Pb)	2009/06/01		94	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2009/06/01 1:49 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton

Report To Client Name: O'Connor Associates Environmental In
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T01
Task #: 11062583
Quote: A85084
COC/Submission #: 31965

TAT: 3 Days
Rush: Yes

Maxxam Job #: A963823

Received By: MARK FERRER
Received: 2009/05/29 15:15

DQW #: 620
DQW Created By: EMA GITEJ
DQW Created: 2009/06/01 12:53

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CP9960	EX1-F19-4.0M	Soil	F1BTEXHS-S	F1BTEX	D10-Ethylbenzene	#5 Surrogate Recovery Above Control Limit	#15 No Repeat-Past Hold Time	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej
Date: 2009/06/01 12:53
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature: NHaywood
Date: 2009/06/01
Name: NANCY HAYWOOD
Title: PROJECT MANAGER

Data Quality Waiver Reviewed and Declined By:
Signature:
Date:
Name:
Title:

Comments / Requested Actions:

If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

Validation Signature Page

Maxxam Job #: A963823

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

BRAD NEWMAN, Scientific Specialist

CRISTINA NERVO, Scientific Services

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31965

COMPANY NAME: (OA) O'Connor Associates
PH #: 613 742 1781
FAX #: 613 742 6064
COMPANY ADDRESS: 3420 Conc 1-ek Rd #104 Ottawa, ON K1J1E9
CLIENT PROJECT ID: (#) 10-8518 TO1
SAMPLER NAME (PRINT): PIERRE D'ANGELO
PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	SP-7	CP9958	S	3	09/05/28	1100	X	X	X					X										
2	SP-8	CP9959	S	3	09/05/28	1130	X	X	X					X										
3	Ex1-F19-4.0m	CP9960	S	3	09/05/28	1200	X	X	X					X										
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa
MAXXAM TASK ORDER #: 1106283
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TOR

MAXXAM JOB #: A963823
SAMPLES ENTERED BY:

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	YES	2/2/2°C	

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
Pierre D'Angelo	09/05/28	19:30	Ashitha Sukumar	09/05/29	15:15
			ASHITHA SUKUMAR	AS	

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *28-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A963823*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The extraction surrogate recovery for D10-Ethylbenznene was 143% which is outside QC limit (30-130%). All other lab QC have met acceptance criteria.*
Extraction Surrogate Recovery		*X*		
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

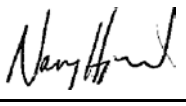
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *1-Jun-09* Date of Response: *1-Jun-09*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *1-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31967

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A963888
Received: 2009/05/29, 15:15

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31967

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A963888
Received: 2009/05/29, 15:15

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

Encryption Key

Ema Gitej

05 Jun 2009 18:00:01 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A963888
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ0322	CQ0323	CQ0324		
Sampling Date		2009/05/27 12:00	2009/05/27 12:30	2009/05/27 13:00		
COC Number		31967	31967	31967		
	Units	**EX1-EW1-4.0M**	**EX1-EW2-4.0M**	**EX1-EW3-4.0M**	**RDL**	**QC Batch**
Moisture	%	22	21	18	0.2	1834278
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1836315
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1836315
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	1836315
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.02	1836315
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.04	1836315
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.04	1836315
F1 (C6-C10)	ug/g	<10	<10	<10	10	1836315
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1836315
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1834300
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1834300
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1834300
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1834300
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	103	102	103		1836315
o-Terphenyl	%	81	84	83		1834300
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	104	104	104		1836315
4-Bromofluorobenzene	%	94	94	94		1836315
D4-1,2-Dichloroethane	%	102	102	102		1836315

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963888
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ0325		
Sampling Date		2009/05/27 12:30		
COC Number		31967		
	Units	**QA4**	**RDL**	**QC Batch**
Moisture	%	19	0.2	1834278
Benzene	ug/g	<0.02	0.02	1836315
Toluene	ug/g	<0.02	0.02	1836315
Ethylbenzene	ug/g	<0.02	0.02	1836315
o-Xylene	ug/g	<0.02	0.02	1836315
p+m-Xylene	ug/g	<0.04	0.04	1836315
Total Xylenes	ug/g	<0.04	0.04	1836315
F1 (C6-C10)	ug/g	<10	10	1836315
F1 (C6-C10) - BTEX	ug/g	<10	10	1836315
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	1834300
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1834300
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1834300
Reached Baseline at C50	ug/g	Yes		1834300
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	103		1836315
o-Terphenyl	%	84		1834300
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	104		1836315
4-Bromofluorobenzene	%	95		1836315
D4-1,2-Dichloroethane	%	102		1836315

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963888
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CQ0322	CQ0323	CQ0324		
Sampling Date		2009/05/27 12:00	2009/05/27 12:30	2009/05/27 13:00		
COC Number		31967	31967	31967		
	Units	**EX1-EW1-4.0M**	**EX1-EW2-4.0M**	**EX1-EW3-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	6	6	7	5	1832862

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CQ0325		
Sampling Date		2009/05/27 12:30		
COC Number		31967		
	Units	**QA4**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	7	5	1832862

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963888
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CQ0322 **Collected** 2009/05/27
Sample ID EX1-EW1-4.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1836315	2009/05/29	2009/06/04	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834300	2009/06/02	2009/06/03	BLZ
Total Metals Analysis by ICP	ICP	1832862	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1834278	N/A	2009/06/02	AC

Maxxam ID CQ0323 **Collected** 2009/05/27
Sample ID EX1-EW2-4.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1836315	2009/05/29	2009/06/04	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834300	2009/06/02	2009/06/03	BLZ
Total Metals Analysis by ICP	ICP	1832862	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1834278	N/A	2009/06/02	AC

Maxxam ID CQ0324 **Collected** 2009/05/27
Sample ID EX1-EW3-4.0M **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1836315	2009/05/29	2009/06/04	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834300	2009/06/02	2009/06/03	BLZ
Total Metals Analysis by ICP	ICP	1832862	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1834278	N/A	2009/06/02	AC

Maxxam ID CQ0325 **Collected** 2009/05/27
Sample ID QA4 **Shipped** 2009/05/28
Matrix Soil **Received** 2009/05/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1836315	2009/05/29	2009/06/04	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834300	2009/06/02	2009/06/03	BLZ
Total Metals Analysis by ICP	ICP	1832862	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1834278	N/A	2009/06/02	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A963888
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A963888

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1832862	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/01	<5		ug/g	
1834300	BLZ	Method Blank	o-Terphenyl	2009/06/03		88	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/03	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/03	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/03	<10		ug/g	
1836315	GRU	Method Blank	1,4-Difluorobenzene	2009/06/04		102	%	60 - 140
			4-Bromofluorobenzene	2009/06/04		95	%	60 - 140
			D10-Ethylbenzene	2009/06/04		89	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/04		100	%	60 - 140
			Benzene	2009/06/04	<0.02		ug/g	
			Toluene	2009/06/04	<0.02		ug/g	
			Ethylbenzene	2009/06/04	<0.02		ug/g	
			o-Xylene	2009/06/04	<0.02		ug/g	
			p+m-Xylene	2009/06/04	<0.04		ug/g	
			Total Xylenes	2009/06/04	<0.04		ug/g	
			F1 (C6-C10)	2009/06/04	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/04	<10		ug/g	
1834300	BLZ	LCS	o-Terphenyl	2009/06/03		83	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/03		72	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/03		72	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/03		72	%	60 - 130
1836315	GRU	LCS	1,4-Difluorobenzene	2009/06/04		104	%	60 - 140
			4-Bromofluorobenzene	2009/06/04		97	%	60 - 140
			D10-Ethylbenzene	2009/06/04		90	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/04		84	%	60 - 140
			Benzene	2009/06/04		86	%	60 - 140
			Toluene	2009/06/04		82	%	60 - 140
			Ethylbenzene	2009/06/04		91	%	60 - 140
			o-Xylene	2009/06/04		94	%	60 - 140
			p+m-Xylene	2009/06/04		87	%	60 - 140
			F1 (C6-C10)	2009/06/04		94	%	60 - 140
1832862	APT	SRM	Acid Extractable Lead (Pb)	2009/06/01		94	%	75 - 125

QC Standard = Quality Control Standard

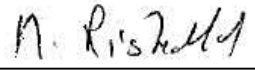
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

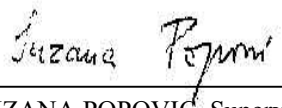
Maxxam Job #: A963888

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31967

COMPANY NAME: (OA) O'Connor Associates
PH #: 613 742 7781
FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd Unit 1 Ottawa ON K1J 1E9
CLIENT PROJECT ID: (#) 10-8518-01
SAMPLER NAME (PRINT): PIERRE D'ANGELO
PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ext-EW1-4.0m	CQ0322	S	3	09/05/27	1200	X	X	X	X				X										
2	Ext-EW2-4.0m	CQ0323	S	3	09/05/27	1230	X	X	X					X										
3	Ext-EW3-4.0m	CQ0324	S	3	09/05/27	1300	X	X	X					X										
4	QA4	CQ0325	S	3	09/05/27	1230	X	X	X					X										
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa
MAXXAM TASK ORDER #: 1106258
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- hot samples as per TOC

MAXXAM JOB #: A963888
SAMPLES ENTERED BY: DW/ jvel

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	YES	2/2/2°C	

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) X	Standard	(15 days)
Rush	(3 days)	Rush	(9 days)
	(2 days)		(6 days)
	(1 day)		(3 days)
	(same day)		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/05/28	19:30	Ashitha Sukumar	09/05/29	15:15
			ASHITHA SUKUMAR		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *27-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A963888*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *5-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31969

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/01

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964109
Received: 2009/05/30, 08:45

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	1	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	1	CAM SOP-00408	EPA 6010
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31969

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/01

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964109
Received: 2009/05/30, 08:45

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

Encryption Key

Ema Gitej

01 Jun 2009 16:38:31 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A964109
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ1327	CQ1327		
Sampling Date		2009/05/29 10:45	2009/05/29 10:45		
COC Number		31969	31969		
	Units	**SP-9**	**SP-9 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	9.8	9.8	0.2	1832620
Benzene	ug/g	0.25	0.31	0.02	1832709
Toluene	ug/g	6.6	5.9	0.02	1832709
Ethylbenzene	ug/g	2.4	1.5	0.02	1832709
o-Xylene	ug/g	4.9	3.0	0.02	1832709
p+m-Xylene	ug/g	11	6.7	0.04	1832709
Total Xylenes	ug/g	16	9.8	0.04	1832709
F1 (C6-C10)	ug/g	80	44	10	1832709
F1 (C6-C10) - BTEX	ug/g	55	26	10	1832709
F2 (C10-C16 Hydrocarbons)	ug/g	120	80	10	1832714
F3 (C16-C34 Hydrocarbons)	ug/g	28	29	10	1832714
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1832714
Reached Baseline at C50	ug/g	Yes	Yes		1832714
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	113	112		1832709
o-Terphenyl	%	86	86		1832714
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	104	104		1832709
4-Bromofluorobenzene	%	98	97		1832709
D4-1,2-Dichloroethane	%	104	102		1832709

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964109
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CQ1327	CQ1327		
Sampling Date		2009/05/29 10:45	2009/05/29 10:45		
COC Number		31969	31969		
	Units	**SP-9**	**SP-9 Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	12	7	5	1833050

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964109
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CQ1327 **Collected** 2009/05/29
Sample ID SP-9 **Shipped** 2009/05/29
Matrix Soil **Received** 2009/05/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832709	2009/05/30	2009/05/30	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832714	2009/05/30	2009/06/01	JKA
Total Metals Analysis by ICP	ICP	1833050	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832620	N/A	2009/05/30	AC

Maxxam ID CQ1327 Dup **Collected** 2009/05/29
Sample ID SP-9 **Shipped** 2009/05/29
Matrix Soil **Received** 2009/05/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1832709	2009/05/30	2009/05/30	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1832714	2009/05/30	2009/06/01	JKA
Total Metals Analysis by ICP	ICP	1833050	2009/06/01	2009/06/01	APT
MOISTURE	BAL	1832620	N/A	2009/05/30	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964109
Report Date: 2009/06/01

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A964109

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1832709	SHK	Method Blank	1,4-Difluorobenzene	2009/05/30		103	%	60 - 140
			4-Bromofluorobenzene	2009/05/30		97	%	60 - 140
			D10-Ethylbenzene	2009/05/30		107	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/30		98	%	60 - 140
			Benzene	2009/05/30	<0.02		ug/g	
			Toluene	2009/05/30	<0.02		ug/g	
			Ethylbenzene	2009/05/30	<0.02		ug/g	
			o-Xylene	2009/05/30	<0.02		ug/g	
			p+m-Xylene	2009/05/30	<0.04		ug/g	
			Total Xylenes	2009/05/30	<0.04		ug/g	
			F1 (C6-C10)	2009/05/30	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/05/30	<10		ug/g	
1832714	JKA	Method Blank	o-Terphenyl	2009/05/31		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/05/31	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/05/31	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/05/31	<10		ug/g	
1833050	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/01	<5		ug/g	
1832620	GKL	RPD [CQ1327-03]	Moisture	2009/05/30	0		%	50
1832709	SHK	RPD [CQ1327-03]	Benzene	2009/05/30	20.7		%	50
			Toluene	2009/05/30	11.4		%	50
			Ethylbenzene	2009/05/30	43.6		%	50
			o-Xylene	2009/05/30	47.8		%	50
			p+m-Xylene	2009/05/30	46.5		%	50
			Total Xylenes	2009/05/30	47.0		%	50
			F1 (C6-C10)	2009/05/30	NC		%	50
			F1 (C6-C10) - BTEX	2009/05/30	NC		%	50
1832714	JKA	RPD [CQ1327-03]	F2 (C10-C16 Hydrocarbons)	2009/06/01	41.9		%	50
			F3 (C16-C34 Hydrocarbons)	2009/06/01	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/06/01	NC		%	50
1833050	APT	RPD [CQ1327-01]	Acid Extractable Lead (Pb)	2009/06/01	NC		%	35
1832709	SHK	MATRIX SPIKE [CQ1327-03]	1,4-Difluorobenzene	2009/05/30		104	%	60 - 140
			4-Bromofluorobenzene	2009/05/30		97	%	60 - 140
			D10-Ethylbenzene	2009/05/30		111	%	30 - 130
			D4-1,2-Dichloroethane	2009/05/30		105	%	60 - 140
			Benzene	2009/05/30		NC (1)	%	60 - 140
			Toluene	2009/05/30		NC (1)	%	60 - 140
			Ethylbenzene	2009/05/30		NC (1)	%	60 - 140
			o-Xylene	2009/05/30		NC (1)	%	60 - 140
			p+m-Xylene	2009/05/30		NC (1)	%	60 - 140
			F1 (C6-C10)	2009/05/30		NC (1)	%	60 - 140
1832714	JKA	MATRIX SPIKE [CQ1327-03]	o-Terphenyl	2009/06/01		88	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/01		82	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/01		82	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/01		82	%	60 - 130
1833050	APT	MATRIX SPIKE [CQ1327-01]	Acid Extractable Lead (Pb)	2009/06/01		90	%	75 - 125
1832709	SHK	LCS	1,4-Difluorobenzene	2009/06/01		105	%	60 - 140
			4-Bromofluorobenzene	2009/06/01		98	%	60 - 140
			D10-Ethylbenzene	2009/06/01		122	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/01		106	%	60 - 140
			Benzene	2009/06/01		90	%	60 - 140
			Toluene	2009/06/01		87	%	60 - 140
			Ethylbenzene	2009/06/01		97	%	60 - 140

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A964109

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1832709	SHK	LCS	o-Xylene	2009/06/01		101	%	60 - 140
			p+m-Xylene	2009/06/01		94	%	60 - 140
			F1 (C6-C10)	2009/06/01		93	%	60 - 140
1832714	JKA	LCS	o-Terphenyl	2009/06/01		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/01		78	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/01		78	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/01		78	%	60 - 130
1833050	APT	SRM	Acid Extractable Lead (Pb)	2009/06/01		97	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
(1) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration.

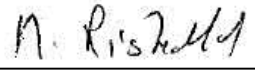
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

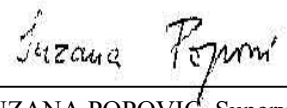
Maxxam Job #: A964109

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31969

COMPANY NAME: (OA)	PH #: 613 742 1781
O'Connor Associates	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518TO1
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	SP-9	CQ1327	S	3	09/05/29	1045	X	X	X					X										
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave

MAXXAM TASK ORDER #: 1106283

IOL CONTACT: Scott Wotton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TOG

MAXXAM JOB #: A964109

SAMPLES ENTERED BY: FW

COOLER ID 1	CUSTODY SEAL Yes	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 1/3/3°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/05/29	14:30	FANG WANG	09/05/30	8:45

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *29-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A964109*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *2-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31968

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964114
Received: 2009/05/30, 08:45

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	3	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	3	CAM SOP-00408	EPA 6010
MOISTURE	3	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 31968

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964114
Received: 2009/05/30, 08:45

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

Encryption Key

Ema Gitej

02 Jun 2009 15:54:42 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A964114
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ1350	CQ1351		
Sampling Date		2009/05/28 15:00	2009/05/29 11:15		
COC Number		31968	31968		
	Units	**EX1-WW2-3.0M**	**EX1-WW3-3.0M**	**RDL**	**QC Batch**
Moisture	%	20	35	0.2	1833053
Benzene	ug/g	1.1	2.3	0.02	1833076
Toluene	ug/g	7.1	11	0.02	1833076
Ethylbenzene	ug/g	7.0	9.7	0.02	1833076
o-Xylene	ug/g	9.2	13	0.02	1833076
p+m-Xylene	ug/g	23	33	0.04	1833076
Total Xylenes	ug/g	33	46	0.04	1833076
F1 (C6-C10)	ug/g	150	170	10	1833076
F1 (C6-C10) - BTEX	ug/g	110	97	10	1833076
F2 (C10-C16 Hydrocarbons)	ug/g	28	55	10	1833923
F3 (C16-C34 Hydrocarbons)	ug/g	<10	12	10	1833923
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1833923
Reached Baseline at C50	ug/g	Yes	Yes		1833923
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	123	121		1833076
o-Terphenyl	%	89	88		1833923
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	110	113		1833076
4-Bromofluorobenzene	%	107	106		1833076
D4-1,2-Dichloroethane	%	104	104		1833076

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964114
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ1352		
Sampling Date		2009/05/29 11:15		
COC Number		31968		
	Units	**QA5**	**RDL**	**QC Batch**
Moisture	%	29	0.2	1833475
Benzene	ug/g	1.8	0.02	1833076
Toluene	ug/g	8.2	0.02	1833076
Ethylbenzene	ug/g	6.6	0.02	1833076
o-Xylene	ug/g	9.3	0.02	1833076
p+m-Xylene	ug/g	23	0.04	1833076
Total Xylenes	ug/g	32	0.04	1833076
F1 (C6-C10)	ug/g	110	10	1833076
F1 (C6-C10) - BTEX	ug/g	59	10	1833076
F2 (C10-C16 Hydrocarbons)	ug/g	14	10	1833923
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1833923
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1833923
Reached Baseline at C50	ug/g	Yes		1833923
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	113		1833076
o-Terphenyl	%	86		1833923
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	107		1833076
4-Bromofluorobenzene	%	102		1833076
D4-1,2-Dichloroethane	%	103		1833076

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964114
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CQ1350	CQ1351	CQ1352		
Sampling Date		2009/05/28 15:00	2009/05/29 11:15	2009/05/29 11:15		
COC Number		31968	31968	31968		
	Units	**EX1-WW2-3.0M**	**EX1-WW3-3.0M**	**QA5**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	8	8	6	5	1833964

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964114
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CQ1350 **Collected** 2009/05/28
Sample ID EX1-WW2-3.0M **Shipped** 2009/05/29
Matrix Soil **Received** 2009/05/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1833076	2009/05/30	2009/06/01	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1833923	2009/06/02	2009/06/02	JKA
Total Metals Analysis by ICP	ICP	1833964	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1833053	N/A	2009/06/01	AC

Maxxam ID CQ1351 **Collected** 2009/05/29
Sample ID EX1-WW3-3.0M **Shipped** 2009/05/29
Matrix Soil **Received** 2009/05/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1833076	2009/05/30	2009/06/01	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1833923	2009/06/02	2009/06/02	JKA
Total Metals Analysis by ICP	ICP	1833964	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1833053	N/A	2009/06/01	AC

Maxxam ID CQ1352 **Collected** 2009/05/29
Sample ID QA5 **Shipped** 2009/05/29
Matrix Soil **Received** 2009/05/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1833076	2009/05/30	2009/06/01	JXI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1833923	2009/06/02	2009/06/02	JKA
Total Metals Analysis by ICP	ICP	1833964	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1833475	N/A	2009/06/01	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964114
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	2.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Samples with ID EX1-WW3-3.0m and QA5 were indicated on the C of C and on the labels however, samples with ID EX1-WW1-3.0m, QA5 and EX1-WW3-3.0m respectively were indicated on the lids.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A964114

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1833076	JXI	Method Blank	1,4-Difluorobenzene	2009/06/01		102	%	60 - 140
			4-Bromofluorobenzene	2009/06/01		106	%	60 - 140
			D10-Ethylbenzene	2009/06/01		104	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/01		97	%	60 - 140
			Benzene	2009/06/01	<0.02		ug/g	
			Toluene	2009/06/01	<0.02		ug/g	
			Ethylbenzene	2009/06/01	<0.02		ug/g	
			o-Xylene	2009/06/01	<0.02		ug/g	
			p+m-Xylene	2009/06/01	<0.04		ug/g	
			Total Xylenes	2009/06/01	<0.04		ug/g	
			F1 (C6-C10)	2009/06/01	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/01	<10		ug/g	
1833923	JKA	Method Blank	o-Terphenyl	2009/06/02		90	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/02	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/02	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/02	<10		ug/g	
1833964	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/02	<5		ug/g	
1833076	JXI	LCS	1,4-Difluorobenzene	2009/06/01		102	%	60 - 140
			4-Bromofluorobenzene	2009/06/01		102	%	60 - 140
			D10-Ethylbenzene	2009/06/01		100	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/01		103	%	60 - 140
			Benzene	2009/06/01		82	%	60 - 140
			Toluene	2009/06/01		86	%	60 - 140
			Ethylbenzene	2009/06/01		97	%	60 - 140
			o-Xylene	2009/06/01		99	%	60 - 140
			p+m-Xylene	2009/06/01		90	%	60 - 140
			F1 (C6-C10)	2009/06/01		94	%	60 - 140
1833923	JKA	LCS	o-Terphenyl	2009/06/02		87	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/02		80	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/02		80	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/02		80	%	60 - 130
1833964	APT	SRM	Acid Extractable Lead (Pb)	2009/06/02		96	%	75 - 125

QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A964114

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 31968

COMPANY NAME: (OA) O'CONNOR Associates	PH #: 613 742 1781 FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J1E9	CLIENT PROJECT ID: (#) 10-8518 TO1
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYCWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex1-WW2-3.0m	CQ1350	S	3	09/05/28	15:00	X	X	X					X										
2	Ex1-WW3-3.0m	CQ1351	S	3	09/05/29	11:15	X	X	X					X										
3	QA5	CQ1352	S	3	09/05/29	11:15	X	X	X					X										
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 11062583

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email jobs confirmation
- test samples as per TOG

MAXXAM JOB #: A964114

SAMPLES ENTERED BY: (TM) / AS

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	Yes	1/3/3°C	

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☒	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/05/29	14:30	FANG WANG	09/05/30	8:45

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *29-May-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A964114*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *2-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32588

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964785
Received: 2009/06/02, 07:35

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	8	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	8	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	8	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	8	CAM SOP-00408	EPA 6010
MOISTURE	8	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32588

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964785
Received: 2009/06/02, 07:35

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

Encryption Key

Ema Gitej

02 Jun 2009 17:11:10 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ5214	CQ5215	CQ5216		
Sampling Date		2009/06/01 11:00	2009/06/01 12:15	2009/06/01 12:30		
COC Number		32588	32588	32588		
	Units	**SP-10**	**SP-11**	**EX1-WW5-3.0M**	**RDL**	**QC Batch**
Moisture	%	12	25	20	0.2	1834099
Benzene	ug/g	<0.02	1.3	0.83	0.02	1834082
Toluene	ug/g	0.67	3.4	1.6	0.02	1834082
Ethylbenzene	ug/g	0.29	8.9	0.77	0.02	1834082
o-Xylene	ug/g	0.63	7.5	1.0	0.02	1834082
p+m-Xylene	ug/g	1.3	23	3.1	0.04	1834082
Total Xylenes	ug/g	1.9	30	4.1	0.04	1834082
F1 (C6-C10)	ug/g	13	120	17	10	1834082
F1 (C6-C10) - BTEX	ug/g	<10	75	10	10	1834082
F2 (C10-C16 Hydrocarbons)	ug/g	25	72	17	10	1834084
F3 (C16-C34 Hydrocarbons)	ug/g	16	62	<10	10	1834084
F4 (C34-C50 Hydrocarbons)	ug/g	<10	21	<10	10	1834084
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1834084
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	115	125	117		1834082
o-Terphenyl	%	82	96	92		1834084
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	100	99		1834082
4-Bromofluorobenzene	%	100	98	99		1834082
D4-1,2-Dichloroethane	%	99	100	100		1834082

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ5217		CQ5218		
Sampling Date		2009/06/01 13:00		2009/06/01 13:15		
COC Number		32588		32588		
	Units	**EX1-WW6-3.0M**	**RDL**	**EX1-F23-4.0M**	**RDL**	**QC Batch**
Moisture	%	18	0.2	27	0.2	1834099
Benzene	ug/g	28	0.8	2.1	0.02	1834082
Toluene	ug/g	510	0.8	10	0.02	1834082
Ethylbenzene	ug/g	220	0.8	1.8	0.02	1834082
o-Xylene	ug/g	350	0.8	2.3	0.02	1834082
p+m-Xylene	ug/g	840	2	6.8	0.04	1834082
Total Xylenes	ug/g	1200	2	9.0	0.04	1834082
F1 (C6-C10)	ug/g	7500	400	43	10	1834082
F1 (C6-C10) - BTEX	ug/g	5500	400	19	10	1834082
F2 (C10-C16 Hydrocarbons)	ug/g	1700	10	18	10	1834084
F3 (C16-C34 Hydrocarbons)	ug/g	77	10	<10	10	1834084
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1834084
Reached Baseline at C50	ug/g	Yes		Yes		1834084
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	321 (1)		113		1834082
o-Terphenyl	%	98		101		1834084
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	99		98		1834082
4-Bromofluorobenzene	%	100		101		1834082
D4-1,2-Dichloroethane	%	99		98		1834082

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) D10-Ethylbenzene recovery biased due to high level of native hydrocarbon present in sample. Reprocessing of the sample was not possible within the allowed holding time.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ5219	CQ5220	CQ5220		
Sampling Date		2009/06/01 13:30	2009/06/01 14:00	2009/06/01 14:00		
COC Number		32588	32588	32588		
	Units	**EX1-F26-4.0M**	**EX1-NW2-3.0M**	**EX1-NW2-3.0M Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	36	9.3		0.2	1834099
Benzene	ug/g	5.7	<0.02	<0.02	0.02	1834082
Toluene	ug/g	15	<0.02	<0.02	0.02	1834082
Ethylbenzene	ug/g	3.0	0.04	0.06	0.02	1834082
o-Xylene	ug/g	3.9	0.11	0.15	0.02	1834082
p+m-Xylene	ug/g	11	0.18	0.26	0.04	1834082
Total Xylenes	ug/g	15	0.29	0.41	0.04	1834082
F1 (C6-C10)	ug/g	68	<10	<10	10	1834082
F1 (C6-C10) - BTEX	ug/g	30	<10	<10	10	1834082
F2 (C10-C16 Hydrocarbons)	ug/g	18	36	44	10	1834084
F3 (C16-C34 Hydrocarbons)	ug/g	<10	24	31	10	1834084
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1834084
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1834084
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	119	107	111		1834082
o-Terphenyl	%	100	80	81		1834084
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	103	104	106		1834082
4-Bromofluorobenzene	%	92	93	94		1834082
D4-1,2-Dichloroethane	%	99	97	99		1834082

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ5221	CQ5221		
Sampling Date		2009/06/01 13:00	2009/06/01 13:00		
COC Number		32588	32588		
	Units	**QA6**	**QA6 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	19	19	0.2	1834099
Benzene	ug/g	7.9		0.2	1834082
Toluene	ug/g	170		0.2	1834082
Ethylbenzene	ug/g	83		0.2	1834082
o-Xylene	ug/g	130		0.2	1834082
p+m-Xylene	ug/g	310		0.4	1834082
Total Xylenes	ug/g	440		0.4	1834082
F1 (C6-C10)	ug/g	2700		100	1834082
F1 (C6-C10) - BTEX	ug/g	2000		100	1834082
F2 (C10-C16 Hydrocarbons)	ug/g	1000		10	1834084
F3 (C16-C34 Hydrocarbons)	ug/g	64		10	1834084
F4 (C34-C50 Hydrocarbons)	ug/g	<10		10	1834084
Reached Baseline at C50	ug/g	Yes			1834084
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	160 (1)			1834082
o-Terphenyl	%	96			1834084
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105			1834082
4-Bromofluorobenzene	%	94			1834082
D4-1,2-Dichloroethane	%	103			1834082

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch
(1) D10-Ethylbenzene recovery biased due to high level of native hydrocarbon present in sample. Reprocessing of the sample was not possible within the allowed holding time.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CQ5214	CQ5215	CQ5216		
Sampling Date		2009/06/01 11:00	2009/06/01 12:15	2009/06/01 12:30		
COC Number		32588	32588	32588		
	Units	**SP-10**	**SP-11**	**EX1-WW5-3.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	10	<5	<5	5	1834261

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CQ5217	CQ5218	CQ5219		
Sampling Date		2009/06/01 13:00	2009/06/01 13:15	2009/06/01 13:30		
COC Number		32588	32588	32588		
	Units	**EX1-WW6-3.0M**	**EX1-F23-4.0M**	**EX1-F26-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	6	5	1834261

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CQ5220	CQ5220	CQ5221		
Sampling Date		2009/06/01 14:00	2009/06/01 14:00	2009/06/01 13:00		
COC Number		32588	32588	32588		
	Units	**EX1-NW2-3.0M**	**EX1-NW2-3.0M Lab-Dup**	**QA6**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	<5	5	1834261

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CQ5214 **Collected** 2009/06/01
Sample ID SP-10 **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam ID CQ5215 **Collected** 2009/06/01
Sample ID SP-11 **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam ID CQ5216 **Collected** 2009/06/01
Sample ID EX1-WW5-3.0M **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam ID CQ5217 **Collected** 2009/06/01
Sample ID EX1-WW6-3.0M **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam ID CQ5218 **Collected** 2009/06/01
Sample ID EX1-F23-4.0M **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CQ5219 **Collected** 2009/06/01
Sample ID EX1-F26-4.0M **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam ID CQ5220 **Collected** 2009/06/01
Sample ID EX1-NW2-3.0M **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam ID CQ5220 Dup **Collected** 2009/06/01
Sample ID EX1-NW2-3.0M **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT

Maxxam ID CQ5221 **Collected** 2009/06/01
Sample ID QA6 **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834082	2009/06/02	2009/06/02	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834084	2009/06/02	2009/06/02	NCI
Total Metals Analysis by ICP	ICP	1834261	2009/06/02	2009/06/02	APT
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam ID CQ5221 Dup **Collected** 2009/06/01
Sample ID QA6 **Shipped** 2009/06/01
Matrix Soil **Received** 2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	1834099	N/A	2009/06/02	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964785
Report Date: 2009/06/02

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A964785

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1834082	AAI	Method Blank	1,4-Difluorobenzene	2009/06/02		101	%	60 - 140
			4-Bromofluorobenzene	2009/06/02		99	%	60 - 140
			D10-Ethylbenzene	2009/06/02		121	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/02		98	%	60 - 140
			Benzene	2009/06/02	<0.02		ug/g	
			Toluene	2009/06/02	<0.02		ug/g	
			Ethylbenzene	2009/06/02	<0.02		ug/g	
			o-Xylene	2009/06/02	<0.02		ug/g	
			p+m-Xylene	2009/06/02	<0.04		ug/g	
			Total Xylenes	2009/06/02	<0.04		ug/g	
			F1 (C6-C10)	2009/06/02	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/02	<10		ug/g	
1834084	NCI	Method Blank	o-Terphenyl	2009/06/02		83	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/02	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/02	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/02	<10		ug/g	
1834261	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/02	<5		ug/g	
1834082	AAI	RPD [CQ5220-02]	Benzene	2009/06/02	NC		%	50
			Toluene	2009/06/02	NC		%	50
			Ethylbenzene	2009/06/02	NC		%	50
			o-Xylene	2009/06/02	32.0		%	50
			p+m-Xylene	2009/06/02	NC		%	50
			Total Xylenes	2009/06/02	34.1		%	50
			F1 (C6-C10)	2009/06/02	NC		%	50
			F1 (C6-C10) - BTEX	2009/06/02	NC		%	50
1834084	NCI	RPD [CQ5220-02]	F2 (C10-C16 Hydrocarbons)	2009/06/02	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/06/02	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/06/02	NC		%	50
1834261	APT	RPD [CQ5220-01]	Acid Extractable Lead (Pb)	2009/06/02	NC		%	35
1834099	MYG	RPD [CQ5221-02]	Moisture	2009/06/02	1.0		%	50
1834082	AAI	MATRIX SPIKE [CQ5220-02]	1,4-Difluorobenzene	2009/06/02		103	%	60 - 140
			4-Bromofluorobenzene	2009/06/02		93	%	60 - 140
			D10-Ethylbenzene	2009/06/02		112	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/02		99	%	60 - 140
			Benzene	2009/06/02		85	%	60 - 140
			Toluene	2009/06/02		83	%	60 - 140
			Ethylbenzene	2009/06/02		88	%	60 - 140
			o-Xylene	2009/06/02		85	%	60 - 140
			p+m-Xylene	2009/06/02		85	%	60 - 140
			F1 (C6-C10)	2009/06/02		86	%	60 - 140
1834084	NCI	MATRIX SPIKE [CQ5220-02]	o-Terphenyl	2009/06/02		80	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/02		86	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/02		86	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/02		86	%	60 - 130
1834261	APT	MATRIX SPIKE [CQ5220-01]	Acid Extractable Lead (Pb)	2009/06/02		109	%	75 - 125
1834082	AAI	LCS	1,4-Difluorobenzene	2009/06/02		107	%	60 - 140
			4-Bromofluorobenzene	2009/06/02		95	%	60 - 140
			D10-Ethylbenzene	2009/06/02		113	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/02		100	%	60 - 140
			Benzene	2009/06/02		86	%	60 - 140
			Toluene	2009/06/02		87	%	60 - 140
			Ethylbenzene	2009/06/02		90	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A964785

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1834082	AAI	LCS	o-Xylene	2009/06/02		92	%	60 - 140
			p+m-Xylene	2009/06/02		88	%	60 - 140
			F1 (C6-C10)	2009/06/02		97	%	60 - 140
1834084	NCI	LCS	o-Terphenyl	2009/06/02		78	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/02		84	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/02		84	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/02		84	%	60 - 130
1834261	APT	SRM	Acid Extractable Lead (Pb)	2009/06/02		95	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2009/06/02 4:51 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton

Report To Client Name: O'Connor Associates Environmental Inc
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T01
Task #: 11062583
Quote: A85084
COC/Submission #: 32588

TAT: 0 Days
Rush: Yes

Maxxam Job #: A964785

Received By: JIMMY LIU
Received: 2009/06/02 07:35

DQW #: 624
DQW Created By: EMA GITEJ
DQW Created: 2009/06/02 15:21

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CQ5217	EX1-WW6-3.0M	Soil	F1BTEXHS-S	F1BTEX	D10-Ethylbenzene	#5 Surrogate Recovery Above Control Limit	#15 No Repeat-Past Hold Time	This may increase the uncertainty associated with these results.
CQ5221	QA6	Soil	F1BTEXHS-S	F1BTEX	D10-Ethylbenzene	#5 Surrogate Recovery Above Control Limit	#15 No Repeat-Past Hold Time	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej
Date: 2009/06/02 15:22
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature:
Date: June 9/09
Name: NANCY HAYWOOD
Title: PROJECT MANAGER

Data Quality Waiver Reviewed and Declined By:
Signature:
Date:
Name:
Title:

Comments / Requested Actions:

If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

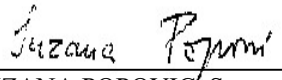
Validation Signature Page

Maxxam Job #: A964785

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

BRAD NEWMAN, Scientific Specialist

MAMDOUH SALIB, Analyst, Hydrocarbons



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 32588

COMPANY NAME: (OA) O'Connor Associates	PH #: ~~613~~ 613 742 1781
	FAX #: 613 742 6084
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): Pierre D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	SP-10	CQ5214	S	3	09/06/01	1100	X	X	X					X										
2	SP-11	CQ5215	S	3	09/06/01	1215	X	X	X					X										
3	Ex1-WW5-3.0m	CQ5216	S	3	09/06/01	1230	X	X	X					X										
4	Ex1-WW6-3.0m	CQ5217	S	3	09/06/01	1300	X	X	X					X										
5	Ex1-F23-4.0m	CQ5218	S	3	09/06/01	1315	X	X	X					X										
6	Ex1-F26-4.0m	CQ5219	S	3	09/06/01	1330	X	X	X					X										
7	Ex1-NW2-3.0m	CQ5220	S	3	09/06/01	1400	X	X	X					X										
8	QA6	CQ5221	S	3	09/06/01	1300	X	X	X					X										
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa	REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: -EDT -email/fax confirmation -hst samples as per TDG
MAXXAM TASK ORDER #: 11062583		
IOL CONTACT: Scott Welton		

MAXXAM JOB #: A964785

SAMPLES ENTERED BY: JL IVD

COOLER ID / CUSTODY SEAL	COOLER ID / CUSTODY SEAL	COOLER ID / CUSTODY SEAL
TEMP 2/0/2° AVG	TEMP AVG	TEMP AVG

TURNAROUND TIMES

	SOIL/WATER	AIR – SUMMA CANISTERS
Standard	(5 days) ☐	(15 days) ☐
Rush	(3 days) ☐	(9 days) ☐
	(2 days) ☐	(6 days) ☐
	(1 day) ☐	(3 days) ☐
	(same day) ☒	

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/06/01	19:30	EVA STIGSSON	2009-06-02	7:35

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *1-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A964785*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The extraction surrogate recovery for D10-Ethylbenznene was 321% and 160% which is outside the QC limit (30-130%). All other lab QC have met acceptance criteria.*
Extraction Surrogate Recovery		*X*		
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*Field duplicate RPD exceeded alert limits due to sample heterogeneity. All other field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD		*X*		

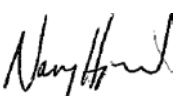
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *2-Jun-09* Date of Response: *9-Jun-09*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *9-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32587

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964795
Received: 2009/06/02, 07:35

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	1	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	1	CAM SOP-00408	EPA 6010
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32587

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A964795
Received: 2009/06/02, 07:35

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

Encryption Key

Ema Gitej

03 Jun 2009 15:41:55 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A964795
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ5252		
Sampling Date		2009/06/01 14:00		
COC Number		32587		
	Units	**EX1-NW1-4.0M**	**RDL**	**QC Batch**
Moisture	%	21	0.2	1834441
Benzene	ug/g	0.72	0.02	1834736
Toluene	ug/g	7.0	0.02	1834736
Ethylbenzene	ug/g	1.1	0.02	1834736
o-Xylene	ug/g	1.4	0.02	1834736
p+m-Xylene	ug/g	3.8	0.04	1834736
Total Xylenes	ug/g	5.2	0.04	1834736
F1 (C6-C10)	ug/g	22	10	1834736
F1 (C6-C10) - BTEX	ug/g	<10	10	1834736
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	1834707
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1834707
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1834707
Reached Baseline at C50	ug/g	Yes		1834707
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	115		1834736
o-Terphenyl	%	79		1834707
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	100		1834736
4-Bromofluorobenzene	%	103		1834736
D4-1,2-Dichloroethane	%	95		1834736

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964795
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CQ5252		
Sampling Date		2009/06/01 14:00		
COC Number		32587		
	Units	**EX1-NW1-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	5	1835374

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964795
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID	CQ5252	**Collected**	2009/06/01
Sample ID	EX1-NW1-4.0M	**Shipped**	2009/06/01
Matrix	Soil	**Received**	2009/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1834736	2009/06/02	2009/06/03	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1834707	2009/06/02	2009/06/03	YY
Total Metals Analysis by ICP	ICP	1835374	2009/06/03	2009/06/03	APT
MOISTURE	BAL	1834441	N/A	2009/06/02	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A964795
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A964795

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1834707	YY	Method Blank	o-Terphenyl	2009/06/02		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/02	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/02	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/02	<10		ug/g	
1834736	GRU	Method Blank	1,4-Difluorobenzene	2009/06/02		98	%	60 - 140
			4-Bromofluorobenzene	2009/06/02		101	%	60 - 140
			D10-Ethylbenzene	2009/06/02		112	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/02		96	%	60 - 140
			Benzene	2009/06/02	<0.02		ug/g	
			Toluene	2009/06/02	<0.02		ug/g	
			Ethylbenzene	2009/06/02	<0.02		ug/g	
			o-Xylene	2009/06/02	<0.02		ug/g	
			p+m-Xylene	2009/06/02	<0.04		ug/g	
			Total Xylenes	2009/06/02	<0.04		ug/g	
			F1 (C6-C10)	2009/06/02	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/02	<10		ug/g	
1835374	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/03	<5		ug/g	
1834707	YY	LCS	o-Terphenyl	2009/06/02		83	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/02		65	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/02		65	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/02		65	%	60 - 130
1834736	GRU	LCS	1,4-Difluorobenzene	2009/06/02		98	%	60 - 140
			4-Bromofluorobenzene	2009/06/02		102	%	60 - 140
			D10-Ethylbenzene	2009/06/02		121	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/02		96	%	60 - 140
			Benzene	2009/06/02		85	%	60 - 140
			Toluene	2009/06/02		92	%	60 - 140
			Ethylbenzene	2009/06/02		91	%	60 - 140
			o-Xylene	2009/06/02		95	%	60 - 140
			p+m-Xylene	2009/06/02		87	%	60 - 140
			F1 (C6-C10)	2009/06/02		86	%	60 - 140
1835374	APT	SRM	Acid Extractable Lead (Pb)	2009/06/03		96	%	75 - 125

QC Standard = Quality Control Standard

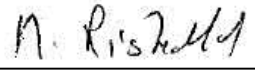
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

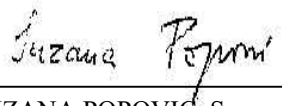
Maxxam Job #: A964795

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 32587

COMPANY NAME: (04) O'Connor Associates	PH #: 613 742 7781 FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)					
1	EX1-NW1-4.0m	CQ5252	S	3	09/06/01	1400	X	X	X					X															
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa	REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: EDT - email job confirmation - hst samples as per TOR	MAXXAM JOB #: A964795
MAXXAM TASK ORDER #: 1106283			SAMPLES ENTERED BY: TL / BOB
IOL CONTACT: Scott Wotton			

COOLER ID / CUSTODY SEAL YES	COOLER ID / CUSTODY SEAL	COOLER ID / CUSTODY SEAL
TEMP 2/0/2° AVG	TEMP AVG	TEMP AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/06/01	19:30	EVA STIGSSON	2009-06-02	7:35

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☒		(3 days) ☐
	(same day) ☐		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *1-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A964795*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

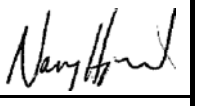
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *3-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30068

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A965559
Received: 2009/06/03, 07:35

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	3	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	3	CAM SOP-00408	EPA 6010
MOISTURE	3	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 30068

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A965559
Received: 2009/06/03, 07:35

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

Encryption Key

Ema Gitej

03 Jun 2009 16:24:06 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A965559
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ8749	CQ8749	CQ8750		
Sampling Date		2009/06/02 10:30	2009/06/02 10:30	2009/06/02 13:00		
COC Number		30068	30068	30068		
	Units	**EX1-F19-4.5M**	**EX1-F19-4.5M Lab-Dup**	**SP-12**	**RDL**	**QC Batch**
Moisture	%	26	26	13	0.2	1835324
Benzene	ug/g	0.28		<0.02	0.02	1835315
Toluene	ug/g	2.4		<0.02	0.02	1835315
Ethylbenzene	ug/g	1.7		0.03	0.02	1835315
o-Xylene	ug/g	2.6		0.23	0.02	1835315
p+m-Xylene	ug/g	8.5		0.32	0.04	1835315
Total Xylenes	ug/g	11		0.55	0.04	1835315
F1 (C6-C10)	ug/g	38		16	10	1835315
F1 (C6-C10) - BTEX	ug/g	23		16	10	1835315
F2 (C10-C16 Hydrocarbons)	ug/g	20		110	10	1835323
F3 (C16-C34 Hydrocarbons)	ug/g	12		88	10	1835323
F4 (C34-C50 Hydrocarbons)	ug/g	<10		17	10	1835323
Reached Baseline at C50	ug/g	Yes		Yes		1835323
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	93		98		1835315
o-Terphenyl	%	96		96		1835323
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	102		103		1835315
4-Bromofluorobenzene	%	98		99		1835315
D4-1,2-Dichloroethane	%	84		87		1835315

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A965559
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CQ8750	CQ8751		
Sampling Date		2009/06/02 13:00	2009/06/02 14:00		
COC Number		30068	30068		
	Units	**SP-12 Lab-Dup**	**SP-13**	**RDL**	**QC Batch**
Moisture	%		21	0.2	1835324
Benzene	ug/g	<0.02	0.89	0.02	1835315
Toluene	ug/g	<0.02	17	0.02	1835315
Ethylbenzene	ug/g	0.03	11	0.02	1835315
o-Xylene	ug/g	0.26	17	0.02	1835315
p+m-Xylene	ug/g	0.35	43	0.04	1835315
Total Xylenes	ug/g	0.61	60	0.04	1835315
F1 (C6-C10)	ug/g	28	390	10	1835315
F1 (C6-C10) - BTEX	ug/g	27	300	10	1835315
F2 (C10-C16 Hydrocarbons)	ug/g	100	150	10	1835323
F3 (C16-C34 Hydrocarbons)	ug/g	69	52	10	1835323
F4 (C34-C50 Hydrocarbons)	ug/g	14	<10	10	1835323
Reached Baseline at C50	ug/g	Yes	Yes		1835323
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	104	107		1835315
o-Terphenyl	%	87	81		1835323
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	105		1835315
4-Bromofluorobenzene	%	100	100		1835315
D4-1,2-Dichloroethane	%	86	88		1835315

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A965559
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CQ8749	CQ8750	CQ8751		
Sampling Date		2009/06/02 10:30	2009/06/02 13:00	2009/06/02 14:00		
COC Number		30068	30068	30068		
	Units	**EX1-F19-4.5M**	**SP-12**	**SP-13**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	5	<5	5	1835374

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A965559
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CQ8749 **Collected** 2009/06/02
Sample ID EX1-F19-4.5M **Shipped** 2009/06/02
Matrix Soil **Received** 2009/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1835315	2009/06/03	2009/06/03	SPV
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1835323	2009/06/03	2009/06/03	NCI
Total Metals Analysis by ICP	ICP	1835374	2009/06/03	2009/06/03	APT
MOISTURE	BAL	1835324	N/A	2009/06/03	AC

Maxxam ID CQ8749 Dup **Collected** 2009/06/02
Sample ID EX1-F19-4.5M **Shipped** 2009/06/02
Matrix Soil **Received** 2009/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	1835324	N/A	2009/06/03	AC

Maxxam ID CQ8750 **Collected** 2009/06/02
Sample ID SP-12 **Shipped** 2009/06/02
Matrix Soil **Received** 2009/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1835315	2009/06/03	2009/06/03	SPV
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1835323	2009/06/03	2009/06/03	NCI
Total Metals Analysis by ICP	ICP	1835374	2009/06/03	2009/06/03	APT
MOISTURE	BAL	1835324	N/A	2009/06/03	AC

Maxxam ID CQ8750 Dup **Collected** 2009/06/02
Sample ID SP-12 **Shipped** 2009/06/02
Matrix Soil **Received** 2009/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1835315	2009/06/03	2009/06/03	SPV
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1835323	2009/06/03	2009/06/03	NCI

Maxxam ID CQ8751 **Collected** 2009/06/02
Sample ID SP-13 **Shipped** 2009/06/02
Matrix Soil **Received** 2009/06/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1835315	2009/06/03	2009/06/03	SPV
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1835323	2009/06/03	2009/06/03	NCI
Total Metals Analysis by ICP	ICP	1835374	2009/06/03	2009/06/03	APT
MOISTURE	BAL	1835324	N/A	2009/06/03	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A965559
Report Date: 2009/06/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A965559

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1835315	SPV	Method Blank	1,4-Difluorobenzene	2009/06/03		104	%	60 - 140
			4-Bromofluorobenzene	2009/06/03		97	%	60 - 140
			D10-Ethylbenzene	2009/06/03		101	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/03		88	%	60 - 140
			Benzene	2009/06/03	<0.02		ug/g	
			Toluene	2009/06/03	<0.02		ug/g	
			Ethylbenzene	2009/06/03	<0.02		ug/g	
			o-Xylene	2009/06/03	<0.02		ug/g	
			p+m-Xylene	2009/06/03	<0.04		ug/g	
			Total Xylenes	2009/06/03	<0.04		ug/g	
			F1 (C6-C10)	2009/06/03	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/03	<10		ug/g	
1835323	NCI	Method Blank	o-Terphenyl	2009/06/03		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/03	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/03	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/03	<10		ug/g	
1835374	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/03	<5		ug/g	
1835324	MYG	RPD [CQ8749-02]	Moisture	2009/06/03	1.5		%	50
1835315	SPV	RPD [CQ8750-02]	Benzene	2009/06/03	NC		%	50
			Toluene	2009/06/03	NC		%	50
			Ethylbenzene	2009/06/03	NC		%	50
			o-Xylene	2009/06/03	10.4		%	50
			p+m-Xylene	2009/06/03	8.7		%	50
			Total Xylenes	2009/06/03	9.4		%	50
			F1 (C6-C10)	2009/06/03	NC		%	50
			F1 (C6-C10) - BTEX	2009/06/03	NC		%	50
1835323	NCI	RPD [CQ8750-02]	F2 (C10-C16 Hydrocarbons)	2009/06/03	11.4		%	50
			F3 (C16-C34 Hydrocarbons)	2009/06/03	24.3		%	50
			F4 (C34-C50 Hydrocarbons)	2009/06/03	NC		%	50
1835315	SPV	MATRIX SPIKE [CQ8750-02]	1,4-Difluorobenzene	2009/06/03		102	%	60 - 140
			4-Bromofluorobenzene	2009/06/03		97	%	60 - 140
			D10-Ethylbenzene	2009/06/03		98	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/03		86	%	60 - 140
			Benzene	2009/06/03		65	%	60 - 140
			Toluene	2009/06/03		75	%	60 - 140
			Ethylbenzene	2009/06/03		78	%	60 - 140
			o-Xylene	2009/06/03		76	%	60 - 140
			p+m-Xylene	2009/06/03		76	%	60 - 140
			F1 (C6-C10)	2009/06/03		91	%	60 - 140
1835323	NCI	MATRIX SPIKE [CQ8750-02]	o-Terphenyl	2009/06/03		82	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/03		89	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/03		89	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/03		89	%	60 - 130
1835315	SPV	LCS	1,4-Difluorobenzene	2009/06/03		104	%	60 - 140
			4-Bromofluorobenzene	2009/06/03		100	%	60 - 140
			D10-Ethylbenzene	2009/06/03		97	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/03		89	%	60 - 140
			Benzene	2009/06/03		69	%	60 - 140
			Toluene	2009/06/03		74	%	60 - 140
			Ethylbenzene	2009/06/03		78	%	60 - 140
			o-Xylene	2009/06/03		81	%	60 - 140
			p+m-Xylene	2009/06/03		77	%	60 - 140
			F1 (C6-C10)	2009/06/03		91	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A965559

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1835323	NCI	LCS	o-Terphenyl	2009/06/03		83	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/03		89	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/03		89	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/03		89	%	60 - 130
1835374	APT	SRM	Acid Extractable Lead (Pb)	2009/06/03		96	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

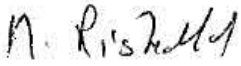
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A965559

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 30068

COMPANY NAME:	PH #: 613 742 1781
(OA) O'Connor Associates	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518 T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex1-F19-4.5m	CQ8749	S	3	09/06/02	1030	X	X	X					X										
2	SP-12	CQ8750	S	3	09/06/02	1300	X	X	X					X										
3	SP-13	CQ8751	S	3	09/06/02	1400	X	X	X					X										
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 11062583

IOL CONTACT: Scott Welton

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TOR

MAXXAM JOB #: A965559

SAMPLES ENTERED BY: TL INS

COOLER ID 1	CUSTODY SEAL YES	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 11.2°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/06/02	19:30	Jimmy Liu	09/06/03	7:35

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *2-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A965559*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

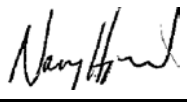
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *3-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32574

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A966403
Received: 2009/06/04, 07:35

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	4	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	4	CAM SOP-00408	EPA 6010
MOISTURE	4	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32574

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A966403
Received: 2009/06/04, 07:35

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

Encryption Key

Ema Gitej

05 Jun 2009 16:22:51 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A966403
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR2216	CR2216	CR2217		
Sampling Date		2009/06/03 09:00	2009/06/03 09:00	2009/06/03 13:30		
COC Number		32574	32574	32574		
	Units	**EX2-NW1-3.0M**	**EX2-NW1-3.0M Lab-Dup**	**EX2-NW2-4.0M**	**RDL**	**QC Batch**
Moisture	%	14		30	0.2	1837296
Benzene	ug/g	<0.02	0.02	4.4	0.02	1837872
Toluene	ug/g	0.05	0.05	10	0.02	1837872
Ethylbenzene	ug/g	0.13	0.13	3.4	0.02	1837872
o-Xylene	ug/g	0.18	0.18	5.2	0.02	1837872
p+m-Xylene	ug/g	0.56	0.55	13	0.04	1837872
Total Xylenes	ug/g	0.73	0.72	18	0.04	1837872
F1 (C6-C10)	ug/g	<10	<10	110	10	1837872
F1 (C6-C10) - BTEX	ug/g	<10	<10	78	10	1837872
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	260	10	1837843
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	130	10	1837843
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1837843
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1837843
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	101	100	106		1837872
o-Terphenyl	%	97	99	102		1837843
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	99	99		1837872
4-Bromofluorobenzene	%	102	102	102		1837872
D4-1,2-Dichloroethane	%	100	102	100		1837872

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A966403
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR2218		CR2219		
Sampling Date		2009/06/03 13:30		2009/06/03 15:00		
COC Number		32574		32574		
	Units	**QA7**	**RDL**	**EX2-NW3-3.0M**	**RDL**	**QC Batch**
Moisture	%	34	0.2	27	0.2	1837296
Benzene	ug/g	3.6	0.02	2.2	0.2	1837872
Toluene	ug/g	6.3	0.02	0.3	0.2	1837872
Ethylbenzene	ug/g	1.5	0.02	11	0.2	1837872
o-Xylene	ug/g	2.4	0.02	1.7	0.2	1837872
p+m-Xylene	ug/g	5.6	0.04	43	0.4	1837872
Total Xylenes	ug/g	7.9	0.04	44	0.4	1837872
F1 (C6-C10)	ug/g	54	10	650	100	1837872
F1 (C6-C10) - BTEX	ug/g	35	10	600	100	1837872
F2 (C10-C16 Hydrocarbons)	ug/g	160	10	2800	10	1837843
F3 (C16-C34 Hydrocarbons)	ug/g	96	10	1400	10	1837843
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1837843
Reached Baseline at C50	ug/g	Yes		Yes		1837843
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	98		128		1837872
o-Terphenyl	%	99		106		1837843
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	99		98		1837872
4-Bromofluorobenzene	%	104		102		1837872
D4-1,2-Dichloroethane	%	103		99		1837872

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A966403
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CR2216	CR2217	CR2218		
Sampling Date		2009/06/03 09:00	2009/06/03 13:30	2009/06/03 13:30		
COC Number		32574	32574	32574		
	Units	**EX2-NW1-3.0M**	**EX2-NW2-4.0M**	**QA7**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	6	10	10	5	1838031

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CR2219		
Sampling Date		2009/06/03 15:00		
COC Number		32574		
	Units	**EX2-NW3-3.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	7	5	1838031

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A966403
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CR2216 **Collected** 2009/06/03
Sample ID EX2-NW1-3.0M **Shipped** 2009/06/03
Matrix Soil **Received** 2009/06/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1837872	2009/06/04	2009/06/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1837843	2009/06/04	2009/06/05	YY
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1837296	N/A	2009/06/04	AC

Maxxam ID CR2216 Dup **Collected** 2009/06/03
Sample ID EX2-NW1-3.0M **Shipped** 2009/06/03
Matrix Soil **Received** 2009/06/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1837872	2009/06/04	2009/06/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1837843	2009/06/04	2009/06/05	YY

Maxxam ID CR2217 **Collected** 2009/06/03
Sample ID EX2-NW2-4.0M **Shipped** 2009/06/03
Matrix Soil **Received** 2009/06/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1837872	2009/06/04	2009/06/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1837843	2009/06/04	2009/06/05	YY
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1837296	N/A	2009/06/04	AC

Maxxam ID CR2218 **Collected** 2009/06/03
Sample ID QA7 **Shipped** 2009/06/03
Matrix Soil **Received** 2009/06/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1837872	2009/06/04	2009/06/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1837843	2009/06/04	2009/06/05	YY
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1837296	N/A	2009/06/04	AC

Maxxam ID CR2219 **Collected** 2009/06/03
Sample ID EX2-NW3-3.0M **Shipped** 2009/06/03
Matrix Soil **Received** 2009/06/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1837872	2009/06/04	2009/06/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1837843	2009/06/04	2009/06/05	YY
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1837296	N/A	2009/06/04	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A966403
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A966403

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1837843	YY	Method Blank	o-Terphenyl	2009/06/05		100	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/05	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/05	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/05	<10		ug/g	
1837872	GRU	Method Blank	1,4-Difluorobenzene	2009/06/05		99	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		104	%	60 - 140
			D10-Ethylbenzene	2009/06/05		99	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		104	%	60 - 140
			Benzene	2009/06/05	<0.02		ug/g	
			Toluene	2009/06/05	<0.02		ug/g	
			Ethylbenzene	2009/06/05	<0.02		ug/g	
			o-Xylene	2009/06/05	<0.02		ug/g	
			p+m-Xylene	2009/06/05	<0.04		ug/g	
			Total Xylenes	2009/06/05	<0.04		ug/g	
			F1 (C6-C10)	2009/06/05	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/05	<10		ug/g	
1838031	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/05	<5		ug/g	
1837843	YY	RPD [CR2216-02]	F2 (C10-C16 Hydrocarbons)	2009/06/05	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/06/05	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/06/05	NC		%	50
1837872	GRU	RPD [CR2216-02]	Benzene	2009/06/05	NC		%	50
			Toluene	2009/06/05	NC		%	50
			Ethylbenzene	2009/06/05	1.5		%	50
			o-Xylene	2009/06/05	0.9		%	50
			p+m-Xylene	2009/06/05	1.4		%	50
			Total Xylenes	2009/06/05	1.2		%	50
			F1 (C6-C10)	2009/06/05	NC		%	50
			F1 (C6-C10) - BTEX	2009/06/05	NC		%	50
1837843	YY	MATRIX SPIKE [CR2216-02]	o-Terphenyl	2009/06/04		94	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/04		80	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/04		80	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/04		80	%	60 - 130
1837872	GRU	MATRIX SPIKE [CR2216-02]	1,4-Difluorobenzene	2009/06/05		99	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		103	%	60 - 140
			D10-Ethylbenzene	2009/06/05		105	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		102	%	60 - 140
			Benzene	2009/06/05		85	%	60 - 140
			Toluene	2009/06/05		87	%	60 - 140
			Ethylbenzene	2009/06/05		91	%	60 - 140
			o-Xylene	2009/06/05		96	%	60 - 140
			p+m-Xylene	2009/06/05		89	%	60 - 140
			F1 (C6-C10)	2009/06/05		90	%	60 - 140
1837843	YY	LCS	o-Terphenyl	2009/06/04		95	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/04		77	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/04		77	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/04		77	%	60 - 130
1837872	GRU	LCS	1,4-Difluorobenzene	2009/06/05		98	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		102	%	60 - 140
			D10-Ethylbenzene	2009/06/05		96	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		102	%	60 - 140
			Benzene	2009/06/05		76	%	60 - 140
			Toluene	2009/06/05		80	%	60 - 140
			Ethylbenzene	2009/06/05		85	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A966403

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1837872	GRU	LCS	o-Xylene	2009/06/05		90	%	60 - 140
			p+m-Xylene	2009/06/05		85	%	60 - 140
			F1 (C6-C10)	2009/06/05		77	%	60 - 140
1838031	APT	SRM	Acid Extractable Lead (Pb)	2009/06/05		97	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

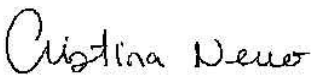
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

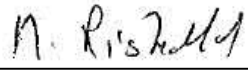
Maxxam Job #: A966403

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

BRAD NEWMAN, Scientific Specialist



CRISTINA NERVO, Scientific Services



MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 32574

COMPANY NAME: (OA) O'Connor Associates

PH #: 613 742 1781

FAX #: 613 742 6064

COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9

CLIENT PROJECT ID: (#) 10-8518T01

SAMPLER NAME (PRINT): PIERRE D'ANGELO

PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex2-NW1-3.0m	CR2216	S	3	09/06/03	900	X	X	X					X										
2	Ex2-NW2-4.0m	CR2217	S	3	09/06/03	1330	X	X	X					X										
3	QA7	CR2218	S	3	09/06/03	1330	X	X	X					X										
4	Ex2-NW3-3.0m	CR2219	S	3	09/06/03	1500	X	X	X					X										
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 11062583

IOL CONTACT: Scott Welton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TDG

MAXXAM JOB #: A966403

SAMPLES ENTERED BY: 7L / [illegible]

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 1/1/2 °C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard (5 days)	☐	Standard (15 days)	☐
Rush (3 days)	☐	Rush (9 days)	☐
(2 days)	☐	(6 days)	☐
(1 day)	☒	(3 days)	☐
(same day)	☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/06/03	19:30	VICKY DRAGUSANU	09/06/04	7:35

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *3-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A966403*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

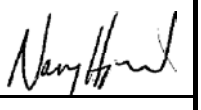
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *5-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32575

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A966410
Received: 2009/06/04, 07:35

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	2	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	2	CAM SOP-00408	EPA 6010
MOISTURE	2	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32575

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A966410
Received: 2009/06/04, 07:35

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

Encryption Key

Ema Gitej

05 Jun 2009 16:27:32 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A966410
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR2245	CR2246		
Sampling Date		2009/06/03 09:30	2009/06/03 10:00		
COC Number		32575	32575		
	Units	**EX2-F2-4.1M**	**EX2-F3-4.1M**	**RDL**	**QC Batch**
Moisture	%	29	30	0.2	1837296
Benzene	ug/g	6.4	6.9	0.02	1837872
Toluene	ug/g	18	24	0.02	1837872
Ethylbenzene	ug/g	2.0	2.4	0.02	1837872
o-Xylene	ug/g	3.4	4.2	0.02	1837872
p+m-Xylene	ug/g	8.0	9.8	0.04	1837872
Total Xylenes	ug/g	11	14	0.04	1837872
F1 (C6-C10)	ug/g	52	77	10	1837872
F1 (C6-C10) - BTEX	ug/g	14	29	10	1837872
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	1837843
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	1837843
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1837843
Reached Baseline at C50	ug/g	Yes	Yes		1837843
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	104	104		1837872
o-Terphenyl	%	101	104		1837843
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	98	98		1837872
4-Bromofluorobenzene	%	102	101		1837872
D4-1,2-Dichloroethane	%	100	98		1837872

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A966410
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CR2245	CR2246		
Sampling Date		2009/06/03 09:30	2009/06/03 10:00		
COC Number		32575	32575		
	Units	**EX2-F2-4.1M**	**EX2-F3-4.1M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	11	6	5	1838031

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A966410
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CR2245 **Collected** 2009/06/03
Sample ID EX2-F2-4.1M **Shipped** 2009/06/03
Matrix Soil **Received** 2009/06/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1837872	2009/06/04	2009/06/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1837843	2009/06/04	2009/06/05	YY
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1837296	N/A	2009/06/04	AC

Maxxam ID CR2246 **Collected** 2009/06/03
Sample ID EX2-F3-4.1M **Shipped** 2009/06/03
Matrix Soil **Received** 2009/06/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1837872	2009/06/04	2009/06/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1837843	2009/06/04	2009/06/05	YY
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1837296	N/A	2009/06/04	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A966410
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A966410

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1837843	YY	Method Blank	o-Terphenyl	2009/06/05		100	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/05	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/05	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/05	<10		ug/g	
1837872	GRU	Method Blank	1,4-Difluorobenzene	2009/06/05		99	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		104	%	60 - 140
			D10-Ethylbenzene	2009/06/05		99	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		104	%	60 - 140
			Benzene	2009/06/05	<0.02		ug/g	
			Toluene	2009/06/05	<0.02		ug/g	
			Ethylbenzene	2009/06/05	<0.02		ug/g	
			o-Xylene	2009/06/05	<0.02		ug/g	
			p+m-Xylene	2009/06/05	<0.04		ug/g	
			Total Xylenes	2009/06/05	<0.04		ug/g	
			F1 (C6-C10)	2009/06/05	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/05	<10		ug/g	
1838031	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/05	<5		ug/g	
1837843	YY	LCS	o-Terphenyl	2009/06/04		95	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/04		77	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/04		77	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/04		77	%	60 - 130
1837872	GRU	LCS	1,4-Difluorobenzene	2009/06/05		98	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		102	%	60 - 140
			D10-Ethylbenzene	2009/06/05		96	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		102	%	60 - 140
			Benzene	2009/06/05		76	%	60 - 140
			Toluene	2009/06/05		80	%	60 - 140
			Ethylbenzene	2009/06/05		85	%	60 - 140
			o-Xylene	2009/06/05		90	%	60 - 140
			p+m-Xylene	2009/06/05		85	%	60 - 140
			F1 (C6-C10)	2009/06/05		77	%	60 - 140
1838031	APT	SRM	Acid Extractable Lead (Pb)	2009/06/05		97	%	75 - 125

QC Standard = Quality Control Standard

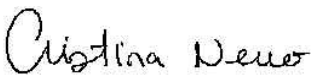
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

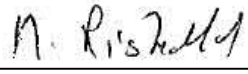
Maxxam Job #: A966410

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

BRAD NEWMAN, Scientific Specialist



CRISTINA NERVO, Scientific Services



MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 32575

COMPANY NAME: (OA) O'Connor Associates

PH #: 613 742 1781

FAX #: 613 742 6064

COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9

CLIENT PROJECT ID: (#) 10-8518T01

SAMPLER NAME (PRINT): PIERRE D'ANGELO

PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex2-F2-4.1m	CR2245	S	3	09/06/03	930	X	X	X					X										
2	Ex2-F3-4.1m	CR2246	S	3	09/06/03	1000	X	X	X					X										
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 11062583

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TDG

MAXXAM JOB #: A966410

SAMPLES ENTERED BY: 7L / [illegible]

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 11/12 °C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard (5 days)	☐	Standard (15 days)	☐
Rush (3 days)	☐	Rush (9 days)	☐
(2 days)	☐	(6 days)	☐
(1 day)	☒	(3 days)	☐
(same day)	☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO PDA	09/06/03	19:30	[signature] VICKY DRAGOSANO	09/06/04	7:35

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *3-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A966410*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

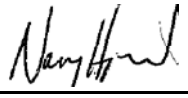
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *27-Jul-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32585

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A967022
Received: 2009/06/05, 07:35

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	3	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	3	CAM SOP-00408	EPA 6010
MOISTURE	3	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32585

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A967022
Received: 2009/06/05, 07:35

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

Encryption Key

Ema Gitej

05 Jun 2009 16:55:15 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A967022
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR5257	CR5258	CR5258		
Sampling Date		2009/06/04 15:00	2009/06/04 16:00	2009/06/04 16:00		
COC Number		32585	32585	32585		
	Units	**SP-14**	**EX2-F4-4.1M**	**EX2-F4-4.1M Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	16	34	34	0.2	1838083
Benzene	ug/g	0.14	1.0	1.0	0.02	1838120
Toluene	ug/g	0.18	0.08	0.10	0.02	1838120
Ethylbenzene	ug/g	0.24	1.6	2.1	0.02	1838120
o-Xylene	ug/g	0.36	2.7	3.4	0.02	1838120
p+m-Xylene	ug/g	0.92	6.0	7.6	0.04	1838120
Total Xylenes	ug/g	1.3	8.7	11	0.04	1838120
F1 (C6-C10)	ug/g	<10	140	190	10	1838120
F1 (C6-C10) - BTEX	ug/g	<10	130	170	10	1838120
F2 (C10-C16 Hydrocarbons)	ug/g	150	230	300	10	1838078
F3 (C16-C34 Hydrocarbons)	ug/g	72	150	180	10	1838078
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1838078
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1838078
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	101	109	117		1838120
o-Terphenyl	%	81	91	90		1838078
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	100	103		1838120
4-Bromofluorobenzene	%	100	101	99		1838120
D4-1,2-Dichloroethane	%	89	94	90		1838120

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967022
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR5259		
Sampling Date		2009/06/04 16:30		
COC Number		32585		
	Units	**EX2-NW4-3.0M**	**RDL**	**QC Batch**
Moisture	%	22	0.2	1838083
Benzene	ug/g	1.6	0.4	1838120
Toluene	ug/g	1.5	0.4	1838120
Ethylbenzene	ug/g	7.7	0.4	1838120
o-Xylene	ug/g	12	0.4	1838120
p+m-Xylene	ug/g	22	0.8	1838120
Total Xylenes	ug/g	34	0.8	1838120
F1 (C6-C10)	ug/g	1300	200	1838120
F1 (C6-C10) - BTEX	ug/g	1200	200	1838120
F2 (C10-C16 Hydrocarbons)	ug/g	4600	10	1838078
F3 (C16-C34 Hydrocarbons)	ug/g	2200	10	1838078
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1838078
Reached Baseline at C50	ug/g	Yes		1838078
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	165 (1)		1838120
o-Terphenyl	%	113		1838078
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	100		1838120
4-Bromofluorobenzene	%	100		1838120
D4-1,2-Dichloroethane	%	89		1838120

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) D10-Ethylbenzene recovery biased due to high level of native hydrocarbon present in sample. Reprocessing of the sample was not possible within the allowed holding time.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967022
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CR5257	CR5258	CR5259		
Sampling Date		2009/06/04 15:00	2009/06/04 16:00	2009/06/04 16:30		
COC Number		32585	32585	32585		
	Units	**SP-14**	**EX2-F4-4.1M**	**EX2-NW4-3.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	7	<5	5	1838031

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967022
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CR5257 **Collected** 2009/06/04
Sample ID SP-14 **Shipped** 2009/06/04
Matrix Soil **Received** 2009/06/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1838120	2009/06/05	2009/06/05	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1838078	2009/06/05	2009/06/05	RGA
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1838083	N/A	2009/06/05	FOT

Maxxam ID CR5258 **Collected** 2009/06/04
Sample ID EX2-F4-4.1M **Shipped** 2009/06/04
Matrix Soil **Received** 2009/06/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1838120	2009/06/05	2009/06/05	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1838078	2009/06/05	2009/06/05	RGA
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1838083	N/A	2009/06/05	FOT

Maxxam ID CR5258 Dup **Collected** 2009/06/04
Sample ID EX2-F4-4.1M **Shipped** 2009/06/04
Matrix Soil **Received** 2009/06/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1838120	2009/06/05	2009/06/05	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1838078	2009/06/05	2009/06/05	RGA
MOISTURE	BAL	1838083	N/A	2009/06/05	FOT

Maxxam ID CR5259 **Collected** 2009/06/04
Sample ID EX2-NW4-3.0M **Shipped** 2009/06/04
Matrix Soil **Received** 2009/06/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1838120	2009/06/05	2009/06/05	MSB
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1838078	2009/06/05	2009/06/05	RGA
Total Metals Analysis by ICP	ICP	1838031	2009/06/05	2009/06/05	APT
MOISTURE	BAL	1838083	N/A	2009/06/05	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967022
Report Date: 2009/06/05

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	0.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A967022

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1838031	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/05	<5		ug/g	
1838078	RGA	Method Blank	o-Terphenyl	2009/06/05		85	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/05	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/05	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/05	<10		ug/g	
1838120	MSB	Method Blank	1,4-Difluorobenzene	2009/06/05		101	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		101	%	60 - 140
			D10-Ethylbenzene	2009/06/05		103	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		92	%	60 - 140
			Benzene	2009/06/05	<0.02		ug/g	
			Toluene	2009/06/05	<0.02		ug/g	
			Ethylbenzene	2009/06/05	<0.02		ug/g	
			o-Xylene	2009/06/05	<0.02		ug/g	
			p+m-Xylene	2009/06/05	<0.04		ug/g	
			Total Xylenes	2009/06/05	<0.04		ug/g	
			F1 (C6-C10)	2009/06/05	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/05	<10		ug/g	
1838078	RGA	RPD [CR5258-02]	F2 (C10-C16 Hydrocarbons)	2009/06/05	24.5		%	50
			F3 (C16-C34 Hydrocarbons)	2009/06/05	17.7		%	50
			F4 (C34-C50 Hydrocarbons)	2009/06/05	NC		%	50
1838083	MYG	RPD [CR5258-02]	Moisture	2009/06/05	0.3		%	50
1838120	MSB	RPD [CR5258-02]	Benzene	2009/06/05	0.6		%	50
			Toluene	2009/06/05	NC		%	50
			Ethylbenzene	2009/06/05	23.9		%	50
			o-Xylene	2009/06/05	22.9		%	50
			p+m-Xylene	2009/06/05	23.4		%	50
			Total Xylenes	2009/06/05	23.2		%	50
			F1 (C6-C10)	2009/06/05	26.1		%	50
			F1 (C6-C10) - BTEX	2009/06/05	26.5		%	50
1838078	RGA	MATRIX SPIKE [CR5258-02]	o-Terphenyl	2009/06/05		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/05		73	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/05		73	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/05		73	%	60 - 130
1838120	MSB	MATRIX SPIKE [CR5258-02]	1,4-Difluorobenzene	2009/06/05		100	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		101	%	60 - 140
			D10-Ethylbenzene	2009/06/05		110	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		93	%	60 - 140
			Benzene	2009/06/05		79	%	60 - 140
			Toluene	2009/06/05		93	%	60 - 140
			Ethylbenzene	2009/06/05		129	%	60 - 140
			o-Xylene	2009/06/05		137	%	60 - 140
			p+m-Xylene	2009/06/05		124	%	60 - 140
			F1 (C6-C10)	2009/06/05		NC (1)	%	60 - 140
1838078	RGA	LCS	o-Terphenyl	2009/06/05		84	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/05		88	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/05		88	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/05		88	%	60 - 130
1838120	MSB	LCS	1,4-Difluorobenzene	2009/06/05		100	%	60 - 140
			4-Bromofluorobenzene	2009/06/05		101	%	60 - 140
			D10-Ethylbenzene	2009/06/05		101	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/05		93	%	60 - 140
			Benzene	2009/06/05		88	%	60 - 140
			Toluene	2009/06/05		91	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A967022

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1838120	MSB	LCS	Ethylbenzene	2009/06/05		97	%	60 - 140
			o-Xylene	2009/06/05		101	%	60 - 140
			p+m-Xylene	2009/06/05		96	%	60 - 140
			F1 (C6-C10)	2009/06/05		102	%	60 - 140
1838031	APT	SRM	Acid Extractable Lead (Pb)	2009/06/05		97	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
(1) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2009/06/05 4:51 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton

Report To Client Name: O'Connor Associates Environmental In
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T01
Task #: 11062583
Quote: A85084
COC/Submission #: 32585

TAT: 0 Days
Rush: Yes

Maxxam Job #: A967022

Received By: JIMMY LIU
Received: 2009/06/05 07:35

DQW #: 629
DQW Created By: EMA GITEJ
DQW Created: 2009/06/05 16:15

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CR5259	EX2-NW4-3.0M	Soil	F1BTEXHS-S	F1BTEX	D10-Ethylbenzene	#5 Surrogate Recovery Above Control Limit	#15 No Repeat-Past Hold Time	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej Date: 2009/06/05 16:16
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature: Nancy Haywood Date: 2009/06/08
Name: NANCY HAYWOOD
Title: Project Manager

Data Quality Waiver Reviewed and Declined By:
Signature: _____ Date: _____
Name: _____
Title: _____

Comments / Requested Actions: _____

If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

Validation Signature Page

Maxxam Job #: A967022

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 32585

COMPANY NAME: (OA) O'Connor Associates	PH #: 613 742 1781 FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	SP-14	C125257	S	3	09/06/04	1500	X	X	X					X										
2	Ex2-F4-4.1m	C125258	S	3	09/06/04	1600	X	X	X					X										
3	Ex2-NW4-3.0m	C125259	S	3	09/06/04	1630	X	X	X					X										
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 1106258 3

IOL CONTACT: Scott Wolfton

REGULATORY CRITERIA / DETECTION LIMITS: O Reg 153/04 Table 3

SPECIAL INSTRUCTIONS: EDT email job confirmation test samples as per TOC

MAXXAM JOB #: A967022

SAMPLES ENTERED BY: TL / MS

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	Yes	11.0°C	

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS	
Standard	(5 days)	☐	Standard	(15 days) ☐
Rush	(3 days)	☐	Rush	(9 days) ☐
	(2 days)	☐		(6 days) ☐
	(1 day)	☐		(3 days) ☐
	(same day)	☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/06/04	19:30	TLS	09/06/05	09:35
			HIRAZ SOHI		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Page 12 of 12

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *4-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A967022*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The extraction surrogate recovery for D10-Ethylbenznene was 165% which is outside the QC limit (30-130%). Recovery in the matrix spike was not calculated, spike level <2 X native concentration. All other lab QC have met acceptance criteria.*
Extraction Surrogate Recovery		*X*		
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery		*X*		
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

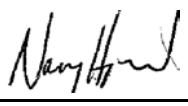
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *5-Jun-09* Date of Response: *8-Jun-09*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *8-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32583

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A967799
Received: 2009/06/06, 08:30

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	1	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	1	CAM SOP-00408	EPA 6010
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32583

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A967799
Received: 2009/06/06, 08:30

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

Encryption Key

Ema Gitej

08 Jun 2009 16:56:42 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A967799
Report Date: 2009/06/08

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR9133	CR9133		
Sampling Date		2009/06/05 12:00	2009/06/05 12:00		
COC Number		32583	32583		
	Units	**SP-15**	**SP-15 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	5.7		0.2	1839486
Benzene	ug/g	<0.02	<0.02	0.02	1839447
Toluene	ug/g	0.07	0.03	0.02	1839447
Ethylbenzene	ug/g	0.04	<0.02	0.02	1839447
o-Xylene	ug/g	0.17	0.09	0.02	1839447
p+m-Xylene	ug/g	0.24	0.11	0.04	1839447
Total Xylenes	ug/g	0.41 (1)	0.20 (1)	0.04	1839447
F1 (C6-C10)	ug/g	<10	<10	10	1839447
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	1839447
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	1839453
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	1839453
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1839453
Reached Baseline at C50	ug/g	Yes	Yes		1839453
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	112	110		1839447
o-Terphenyl	%	90	89		1839453
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	100	100		1839447
4-Bromofluorobenzene	%	98	98		1839447
D4-1,2-Dichloroethane	%	99	99		1839447

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch
(1) Duplicate results exceeded RPD criteria. This may be due to sample heterogeneity.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967799
Report Date: 2009/06/08

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CR9133	CR9133		
Sampling Date		2009/06/05 12:00	2009/06/05 12:00		
COC Number		32583	32583		
	Units	**SP-15**	**SP-15 Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	5	1839688

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967799
Report Date: 2009/06/08

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CR9133 **Collected** 2009/06/05
Sample ID SP-15 **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/07	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam ID CR9133 Dup **Collected** 2009/06/05
Sample ID SP-15 **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/07	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967799
Report Date: 2009/06/08

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A967799

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1839447	AAI	Method Blank	1,4-Difluorobenzene	2009/06/07		99	%	60 - 140
			4-Bromofluorobenzene	2009/06/07		99	%	60 - 140
			D10-Ethylbenzene	2009/06/07		110	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/07		99	%	60 - 140
			Benzene	2009/06/07	<0.02		ug/g	
			Toluene	2009/06/07	<0.02		ug/g	
			Ethylbenzene	2009/06/07	<0.02		ug/g	
			o-Xylene	2009/06/07	<0.02		ug/g	
			p+m-Xylene	2009/06/07	<0.04		ug/g	
			Total Xylenes	2009/06/07	<0.04		ug/g	
			F1 (C6-C10)	2009/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/07	<10		ug/g	
1839453	YY	Method Blank	o-Terphenyl	2009/06/07		90	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/07	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/07	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/07	<10		ug/g	
1839688	CDH	Method Blank	Acid Extractable Lead (Pb)	2009/06/08	<5		ug/g	
1839447	AAI	RPD [CR9133-03]	Benzene	2009/06/07	NC		%	50
			Toluene	2009/06/07	NC		%	50
			Ethylbenzene	2009/06/07	NC		%	50
			o-Xylene	2009/06/07	NC		%	50
			p+m-Xylene	2009/06/07	NC		%	50
			Total Xylenes	2009/06/07	68.3 (1)		%	50
			F1 (C6-C10)	2009/06/07	NC		%	50
			F1 (C6-C10) - BTEX	2009/06/07	NC		%	50
1839453	YY	RPD [CR9133-03]	F2 (C10-C16 Hydrocarbons)	2009/06/07	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/06/07	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/06/07	NC		%	50
1839688	CDH	RPD [CR9133-01]	Acid Extractable Lead (Pb)	2009/06/08	NC		%	35
1839447	AAI	MATRIX SPIKE [CR9133-03]	1,4-Difluorobenzene	2009/06/07		99	%	60 - 140
			4-Bromofluorobenzene	2009/06/07		99	%	60 - 140
			D10-Ethylbenzene	2009/06/07		113	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/07		99	%	60 - 140
			Benzene	2009/06/07		91	%	60 - 140
			Toluene	2009/06/07		98	%	60 - 140
			Ethylbenzene	2009/06/07		101	%	60 - 140
			o-Xylene	2009/06/07		100	%	60 - 140
			p+m-Xylene	2009/06/07		98	%	60 - 140
			F1 (C6-C10)	2009/06/07		81	%	60 - 140
1839453	YY	MATRIX SPIKE [CR9133-03]	o-Terphenyl	2009/06/07		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/07		86	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/07		86	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/07		86	%	60 - 130
1839688	CDH	MATRIX SPIKE [CR9133-01]	Acid Extractable Lead (Pb)	2009/06/08		96	%	75 - 125
1839447	AAI	LCS	1,4-Difluorobenzene	2009/06/07		100	%	60 - 140
			4-Bromofluorobenzene	2009/06/07		99	%	60 - 140
			D10-Ethylbenzene	2009/06/07		114	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/07		99	%	60 - 140
			Benzene	2009/06/07		93	%	60 - 140
			Toluene	2009/06/07		101	%	60 - 140
			Ethylbenzene	2009/06/07		107	%	60 - 140
			o-Xylene	2009/06/07		109	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A967799

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1839447	AAI	LCS	p+m-Xylene	2009/06/07		104	%	60 - 140
			F1 (C6-C10)	2009/06/07		91	%	60 - 140
1839453	YY	LCS	o-Terphenyl	2009/06/07		90	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/07		88	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/07		88	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/07		88	%	60 - 130
1839688	CDH	SRM	Acid Extractable Lead (Pb)	2009/06/08		87	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
(1) Duplicate results exceeded RPD criteria. This may be due to sample heterogeneity.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2009/06/08 4:53 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton

Report To Client Name: O'Connor Associates Environmental In
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T01
Task #: 11062583
Quote: A85084
COC/Submission #: 32583

TAT: 2 Days
Rush: Yes

Maxxam Job #: A967799

Received By: DAVID KING-NAM CHAN
Received: 2009/06/06 08:30

DQW #: 635
DQW Created By: EMA GITEJ
DQW Created: 2009/06/08 16:47

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CR9133	SP-15	Soil	F1BTEXHS-S	F1BTEX	Total Xylenes	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej
Date: 2009/06/08 16:48
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature: Nancy Haywood
Date: 2009/06/09
Name: NANCY HAYWOOD
Title: PROJECT MANAGER

Data Quality Waiver Reviewed and Declined By:
Signature:
Date:
Name:
Title:

Comments / Requested Actions:

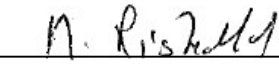
If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

Validation Signature Page

Maxxam Job #: A967799

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 32583

COMPANY NAME: (OA) O'Connor Associates	PH #: 613 742 1781
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	FAX #: 613 742 6064
SAMPLER NAME (PRINT): Pierre D'ANGELO	CLIENT PROJECT ID: (#) 10-8518T01
	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	SP-15	CR9133	S	3	09/06/05	12:00	X	X	X					X										
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 1106283

IOL CONTACT: Scott Welton

REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TOR

MAXXAM JOB #: A967799

SAMPLES ENTERED BY: FW

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	Yes				
TEMP 3/3/3°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☒		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO PDA	09/06/05	14:30	FANG WANG	09/06/06	8:30

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *5-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A967799*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The total xylenes duplicate RPD result (68%) exceeds acceptance criteria (50%). All other lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD		*X*		
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

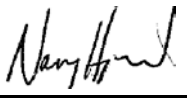
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *8-Jun-09* Date of Response: *9-Jun-09*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *9-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32584

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/09

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A967802
Received: 2009/06/06, 08:30

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	7	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	7	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	7	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	7	CAM SOP-00408	EPA 6010
MOISTURE	7	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32584

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/09

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A967802
Received: 2009/06/06, 08:30

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

Encryption Key

Ema Gitej

09 Jun 2009 12:04:47 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A967802
Report Date: 2009/06/09

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR9159	CR9160	CR9161		
Sampling Date		2009/06/05 10:00	2009/06/04 11:45	2009/06/05 10:30		
COC Number		32584	32584	32584		
	Units	**EX2-F5-4.1M**	**EX2-NW5-3.0M**	**EX2-EW1-4.0M**	**RDL**	**QC Batch**
Moisture	%	35	18	31	0.2	1839486
Benzene	ug/g	0.76	0.37	0.92	0.02	1839447
Toluene	ug/g	0.30	0.17	0.45	0.02	1839447
Ethylbenzene	ug/g	2.5	4.0	1.1	0.02	1839447
o-Xylene	ug/g	0.59	0.53	1.6	0.02	1839447
p+m-Xylene	ug/g	3.7	5.9	3.6	0.04	1839447
Total Xylenes	ug/g	4.3	6.4	5.3	0.04	1839447
F1 (C6-C10)	ug/g	12	210	70	10	1839447
F1 (C6-C10) - BTEX	ug/g	<10	200	63	10	1839447
F2 (C10-C16 Hydrocarbons)	ug/g	15	300	450	10	1839453
F3 (C16-C34 Hydrocarbons)	ug/g	<10	100	210	10	1839453
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1839453
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1839453
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	115	125	115		1839447
o-Terphenyl	%	91	89	93		1839453
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	100	99		1839447
4-Bromofluorobenzene	%	99	101	98		1839447
D4-1,2-Dichloroethane	%	100	100	98		1839447

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967802
Report Date: 2009/06/09

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR9162	CR9163	CR9164		
Sampling Date		2009/06/05 10:45	2009/06/05 11:45	2009/06/05 11:30		
COC Number		32584	32584	32584		
	Units	**EX2-EW2-4.0M**	**EX2-EW3-3.0M**	**EX2-EW4-4.0M**	**RDL**	**QC Batch**
Moisture	%	34	18	32	0.2	1839486
Benzene	ug/g	1.2	<0.02	0.20	0.02	1839447
Toluene	ug/g	1.8	<0.02	0.04	0.02	1839447
Ethylbenzene	ug/g	2.7	<0.02	1.8	0.02	1839447
o-Xylene	ug/g	3.5	<0.02	0.16	0.02	1839447
p+m-Xylene	ug/g	9.0	<0.04	1.9	0.04	1839447
Total Xylenes	ug/g	13	<0.04	2.1	0.04	1839447
F1 (C6-C10)	ug/g	31	<10	<10	10	1839447
F1 (C6-C10) - BTEX	ug/g	13	<10	<10	10	1839447
F2 (C10-C16 Hydrocarbons)	ug/g	22	<10	19	10	1839453
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1839453
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1839453
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1839453
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	108	111	113		1839447
o-Terphenyl	%	88	86	90		1839453
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	99	100	101		1839447
4-Bromofluorobenzene	%	99	98	98		1839447
D4-1,2-Dichloroethane	%	100	100	99		1839447

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967802
Report Date: 2009/06/09

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CR9165		
Sampling Date		2009/06/05 11:45		
COC Number		32584		
	Units	**QA8**	**RDL**	**QC Batch**
Moisture	%	18	0.2	1839486
Benzene	ug/g	<0.02	0.02	1839447
Toluene	ug/g	<0.02	0.02	1839447
Ethylbenzene	ug/g	<0.02	0.02	1839447
o-Xylene	ug/g	<0.02	0.02	1839447
p+m-Xylene	ug/g	<0.04	0.04	1839447
Total Xylenes	ug/g	<0.04	0.04	1839447
F1 (C6-C10)	ug/g	<10	10	1839447
F1 (C6-C10) - BTEX	ug/g	<10	10	1839447
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	1839453
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1839453
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1839453
Reached Baseline at C50	ug/g	Yes		1839453
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	114		1839447
o-Terphenyl	%	87		1839453
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	100		1839447
4-Bromofluorobenzene	%	98		1839447
D4-1,2-Dichloroethane	%	100		1839447

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967802
Report Date: 2009/06/09

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CR9159	CR9160	CR9161		
Sampling Date		2009/06/05 10:00	2009/06/04 11:45	2009/06/05 10:30		
COC Number		32584	32584	32584		
	Units	**EX2-F5-4.1M**	**EX2-NW5-3.0M**	**EX2-EW1-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	<5	5	1839688

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CR9162	CR9163	CR9164		
Sampling Date		2009/06/05 10:45	2009/06/05 11:45	2009/06/05 11:30		
COC Number		32584	32584	32584		
	Units	**EX2-EW2-4.0M**	**EX2-EW3-3.0M**	**EX2-EW4-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	<5	5	1839688

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CR9165		
Sampling Date		2009/06/05 11:45		
COC Number		32584		
	Units	**QA8**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	5	1839688

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967802
Report Date: 2009/06/09

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CR9159 **Collected** 2009/06/05
Sample ID EX2-F5-4.1M **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/07	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam ID CR9160 **Collected** 2009/06/04
Sample ID EX2-NW5-3.0M **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/08	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam ID CR9161 **Collected** 2009/06/05
Sample ID EX2-EW1-4.0M **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/07	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam ID CR9162 **Collected** 2009/06/05
Sample ID EX2-EW2-4.0M **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/08	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam ID CR9163 **Collected** 2009/06/05
Sample ID EX2-EW3-3.0M **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/07	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967802
Report Date: 2009/06/09

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CR9164 **Collected** 2009/06/05
Sample ID EX2-EW4-4.0M **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/07	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam ID CR9165 **Collected** 2009/06/05
Sample ID QA8 **Shipped** 2009/06/05
Matrix Soil **Received** 2009/06/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1839447	2009/06/06	2009/06/07	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1839453	2009/06/06	2009/06/07	YY
Total Metals Analysis by ICP	ICP	1839688	2009/06/08	2009/06/08	CDH
MOISTURE	BAL	1839486	N/A	2009/06/06	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A967802
Report Date: 2009/06/09

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A967802

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1839447	AAI	Method Blank	1,4-Difluorobenzene	2009/06/07		99	%	60 - 140
			4-Bromofluorobenzene	2009/06/07		99	%	60 - 140
			D10-Ethylbenzene	2009/06/07		110	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/07		99	%	60 - 140
			Benzene	2009/06/07	<0.02		ug/g	
			Toluene	2009/06/07	<0.02		ug/g	
			Ethylbenzene	2009/06/07	<0.02		ug/g	
			o-Xylene	2009/06/07	<0.02		ug/g	
			p+m-Xylene	2009/06/07	<0.04		ug/g	
			Total Xylenes	2009/06/07	<0.04		ug/g	
			F1 (C6-C10)	2009/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/07	<10		ug/g	
1839453	YY	Method Blank	o-Terphenyl	2009/06/07		90	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/07	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/07	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/07	<10		ug/g	
1839688	CDH	Method Blank	Acid Extractable Lead (Pb)	2009/06/08	<5		ug/g	
1839447	AAI	LCS	1,4-Difluorobenzene	2009/06/07		100	%	60 - 140
			4-Bromofluorobenzene	2009/06/07		99	%	60 - 140
			D10-Ethylbenzene	2009/06/07		114	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/07		99	%	60 - 140
			Benzene	2009/06/07		93	%	60 - 140
			Toluene	2009/06/07		101	%	60 - 140
			Ethylbenzene	2009/06/07		107	%	60 - 140
			o-Xylene	2009/06/07		109	%	60 - 140
			p+m-Xylene	2009/06/07		104	%	60 - 140
			F1 (C6-C10)	2009/06/07		91	%	60 - 140
1839453	YY	LCS	o-Terphenyl	2009/06/07		90	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/07		88	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/07		88	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/07		88	%	60 - 130
1839688	CDH	SRM	Acid Extractable Lead (Pb)	2009/06/08		87	%	75 - 125

QC Standard = Quality Control Standard

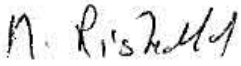
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A967802

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 32584

COMPANY NAME: (CA)	PH #: 613 742 1781
O'CONNOR Associaks	FAX #: 613 742 6064
COMPANY ADDRESS:	CLIENT PROJECT ID: (#)
5420 Canotek Rd #104 Ottawa, ON K1J 1E9	10-8518T01
SAMPLER NAME (PRINT):	PROJECT MANAGER:
PIERRE D'ANGELO	NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Ex2 – FS – 4.1m	CR9159	S	3	09/06/05	1000	X	X	X					X										
2	Ex2 – NWS – 3.0m	CR9160	S	3	09/06/04	1145	X	X	X					X										
3	Ex2 – EW 1 – 4.0m	CR9161	S	3	09/06/05	1030	X	X	X					X										
4	Ex2 – EW 2 – 4.0m	CR9162	S	3	09/06/05	1045	X	X	X					X										
5	Ex2 – EW 3 – 3.0m	CR9163	S	3	09/06/05	1145	X	X	X					X										
6	Ex2 – EW 4 – 4.0m	CR9164	S	3	09/06/05	1130	X	X	X					X										
7	~~Ex2~~ QA8	CR9165	S	3	09/06/05	1145	X	X	X					X										
8																								
9																								
10																								

IOL SITE LOCATION:	REGULATORY CRITERIA / DETECTION LIMITS:	SPECIAL INSTRUCTIONS:	MAXXAM JOB #:
1545 Woodroffe Ave, Ottawa	- O. Reg 153/04	- EDT	A967802
MAXXAM TASK ORDER #: 1106283	- Table 3	- email jds confirmation	SAMPLES ENTERED BY: FW
IOL CONTACT: Scott Welton		- test samples as per TOR	

COOLER ID 1	CUSTODY SEAL Yes	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 3/3/3°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES (circled: SOIL/WATER)

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☒		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
Pierre D'ANGELO PDA	09/06/05	14:30	FANG WANG	09/06/06	8:30

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *04 and 05-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A967802*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *27-Jul-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32582

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A969939
Received: 2009/06/11, 07:31

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	6	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	6	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	6	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	6	CAM SOP-00408	EPA 6010
MOISTURE	6	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32582

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A969939
Received: 2009/06/11, 07:31

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

Encryption Key

Ema Gitej

12 Jun 2009 16:19:01 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A969939
Report Date: 2009/06/12

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CS9679		CS9680		
Sampling Date		2009/06/10 10:00		2009/06/10 10:15		
COC Number		32582		32582		
	Units	**EX1-WW7-3.0M**	**RDL**	**EX1-WW8-3.0M**	**RDL**	**QC Batch**
Moisture	%	14	0.2	19	0.2	1843884
Benzene	ug/g	3.4	0.2	0.11	0.02	1843881
Toluene	ug/g	35	0.2	0.30	0.02	1843881
Ethylbenzene	ug/g	35	0.2	0.79	0.02	1843881
o-Xylene	ug/g	35	0.2	0.84	0.02	1843881
p+m-Xylene	ug/g	110	0.4	2.7	0.04	1843881
Total Xylenes	ug/g	150	0.4	3.6	0.04	1843881
F1 (C6-C10)	ug/g	980	100	25	10	1843881
F1 (C6-C10) - BTEX	ug/g	760	100	20	10	1843881
F2 (C10-C16 Hydrocarbons)	ug/g	330	10	10	10	1843851
F3 (C16-C34 Hydrocarbons)	ug/g	41	10	<10	10	1843851
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1843851
Reached Baseline at C50	ug/g	Yes		Yes		1843851
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	119		91		1843881
o-Terphenyl	%	93		91		1843851
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	115		113		1843881
4-Bromofluorobenzene	%	97		97		1843881
D4-1,2-Dichloroethane	%	100		94		1843881

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A969939
Report Date: 2009/06/12

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CS9681		CS9682		
Sampling Date		2009/06/10 10:30		2009/06/10 10:00		
COC Number		32582		32582		
	Units	**TRENCH2-F1-0.5M**	**RDL**	**QA9**	**RDL**	**QC Batch**
Moisture	%	20	0.2	14	0.2	1843884
Benzene	ug/g	<0.02	0.02	1.4	0.2	1843881
Toluene	ug/g	<0.02	0.02	15	0.2	1843881
Ethylbenzene	ug/g	<0.02	0.02	28	0.2	1843881
o-Xylene	ug/g	<0.02	0.02	27	0.2	1843881
p+m-Xylene	ug/g	<0.04	0.04	100	0.4	1843881
Total Xylenes	ug/g	<0.04	0.04	130	0.4	1843881
F1 (C6-C10)	ug/g	<10	10	910	100	1843881
F1 (C6-C10) - BTEX	ug/g	<10	10	730	100	1843881
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	290	10	1843851
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	61	10	1843851
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1843851
Reached Baseline at C50	ug/g	Yes		Yes		1843851
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	93		131 (1)		1843881
o-Terphenyl	%	98		97		1843851
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	104		106		1843881
4-Bromofluorobenzene	%	99		103		1843881
D4-1,2-Dichloroethane	%	95		98		1843881

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) D10-Ethylbenzene recovery biased due to high level of native hydrocarbon present in sample. Reprocessing of the sample was not possible within the allowed holding time.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A969939
Report Date: 2009/06/12

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CS9683	CS9684		
Sampling Date		2009/06/10 09:00	2009/06/10 11:00		
COC Number		32582	32582		
	Units	**DISPENSER1-F1.0M**	**EX1-F27-4.0M**	**RDL**	**QC Batch**
Moisture	%	30	27	0.2	1843884
Benzene	ug/g	<0.02	1.1	0.02	1843881
Toluene	ug/g	0.03	0.80	0.02	1843881
Ethylbenzene	ug/g	0.06	2.0	0.02	1843881
o-Xylene	ug/g	4.3	0.76	0.02	1843881
p+m-Xylene	ug/g	2.6	5.4	0.04	1843881
Total Xylenes	ug/g	6.9	6.2	0.04	1843881
F1 (C6-C10)	ug/g	170	38	10	1843881
F1 (C6-C10) - BTEX	ug/g	160	28	10	1843881
F2 (C10-C16 Hydrocarbons)	ug/g	40	14	10	1843851
F3 (C16-C34 Hydrocarbons)	ug/g	46	11	10	1843851
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1843851
Reached Baseline at C50	ug/g	Yes	Yes		1843851
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	104	96		1843881
o-Terphenyl	%	91	100		1843851
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	108	105		1843881
4-Bromofluorobenzene	%	98	98		1843881
D4-1,2-Dichloroethane	%	95	94		1843881

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A969939
Report Date: 2009/06/12

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

LEAD IN SOIL (SOIL)

Maxxam ID		CS9679	CS9680	CS9681		
Sampling Date		2009/06/10 10:00	2009/06/10 10:15	2009/06/10 10:30		
COC Number		32582	32582	32582		
	Units	**EX1-WW7-3.0M**	**EX1-WW8-3.0M**	**TRENCH2-F1-0.5M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	15	5	1845070

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CS9682	CS9683	CS9683		
Sampling Date		2009/06/10 10:00	2009/06/10 09:00	2009/06/10 09:00		
COC Number		32582	32582	32582		
	Units	**QA9**	**DISPENSER1-F1.0M**	**DISPENSER1-F1.0M Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	<5	5	1845070

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		CS9684		
Sampling Date		2009/06/10 11:00		
COC Number		32582		
	Units	**EX1-F27-4.0M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	6	5	1845070

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A969939
Report Date: 2009/06/12

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CS9679 **Collected** 2009/06/10
Sample ID EX1-WW7-3.0M **Shipped** 2009/06/10
Matrix Soil **Received** 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1843881	2009/06/11	2009/06/12	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1843851	2009/06/11	2009/06/11	JJE
Total Metals Analysis by ICP	ICP	1845070	2009/06/12	2009/06/12	APT
MOISTURE	BAL	1843884	N/A	2009/06/11	AC

Maxxam ID CS9680 **Collected** 2009/06/10
Sample ID EX1-WW8-3.0M **Shipped** 2009/06/10
Matrix Soil **Received** 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1843881	2009/06/11	2009/06/12	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1843851	2009/06/11	2009/06/11	JJE
Total Metals Analysis by ICP	ICP	1845070	2009/06/12	2009/06/12	APT
MOISTURE	BAL	1843884	N/A	2009/06/11	AC

Maxxam ID CS9681 **Collected** 2009/06/10
Sample ID TRENCH2-F1-0.5M **Shipped** 2009/06/10
Matrix Soil **Received** 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1843881	2009/06/11	2009/06/11	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1843851	2009/06/11	2009/06/11	JJE
Total Metals Analysis by ICP	ICP	1845070	2009/06/12	2009/06/12	APT
MOISTURE	BAL	1843884	N/A	2009/06/11	AC

Maxxam ID CS9682 **Collected** 2009/06/10
Sample ID QA9 **Shipped** 2009/06/10
Matrix Soil **Received** 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1843881	2009/06/11	2009/06/12	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1843851	2009/06/11	2009/06/11	JJE
Total Metals Analysis by ICP	ICP	1845070	2009/06/12	2009/06/12	APT
MOISTURE	BAL	1843884	N/A	2009/06/11	AC

Maxxam ID CS9683 **Collected** 2009/06/10
Sample ID DISPENSER1-F1.0M **Shipped** 2009/06/10
Matrix Soil **Received** 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1843881	2009/06/11	2009/06/12	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1843851	2009/06/11	2009/06/11	JJE
Total Metals Analysis by ICP	ICP	1845070	2009/06/12	2009/06/12	APT
MOISTURE	BAL	1843884	N/A	2009/06/11	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A969939
Report Date: 2009/06/12

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CS9683 Dup — **Collected** 2009/06/10
Sample ID DISPENSER1-F1.0M — **Shipped** 2009/06/10
Matrix Soil — **Received** 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Metals Analysis by ICP	ICP	1845070	2009/06/12	2009/06/12	APT

Maxxam ID CS9684 — **Collected** 2009/06/10
Sample ID EX1-F27-4.0M — **Shipped** 2009/06/10
Matrix Soil — **Received** 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1843881	2009/06/11	2009/06/12	SHK
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1843851	2009/06/11	2009/06/11	JJE
Total Metals Analysis by ICP	ICP	1845070	2009/06/12	2009/06/12	APT
MOISTURE	BAL	1843884	N/A	2009/06/11	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A969939
Report Date: 2009/06/12

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A969939

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1843851	JJE	Method Blank	o-Terphenyl	2009/06/11		94	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/11	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/11	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/11	<10		ug/g	
1843881	SHK	Method Blank	1,4-Difluorobenzene	2009/06/11		105	%	60 - 140
			4-Bromofluorobenzene	2009/06/11		101	%	60 - 140
			D10-Ethylbenzene	2009/06/11		91	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/11		81	%	60 - 140
			Benzene	2009/06/11	<0.02		ug/g	
			Toluene	2009/06/11	<0.02		ug/g	
			Ethylbenzene	2009/06/11	<0.02		ug/g	
			o-Xylene	2009/06/11	<0.02		ug/g	
			p+m-Xylene	2009/06/11	<0.04		ug/g	
			Total Xylenes	2009/06/11	<0.04		ug/g	
			F1 (C6-C10)	2009/06/11	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/11	<10		ug/g	
1845070	APT	Method Blank	Acid Extractable Lead (Pb)	2009/06/12	<5		ug/g	
		RPD [CS9683-01]	Acid Extractable Lead (Pb)	2009/06/12	NC		%	35
		MATRIX SPIKE [CS9683-01]	Acid Extractable Lead (Pb)	2009/06/12		96	%	75 - 125
1843851	JJE	LCS	o-Terphenyl	2009/06/11		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/11		82	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/11		82	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/11		82	%	60 - 130
1843881	SHK	LCS	1,4-Difluorobenzene	2009/06/11		106	%	60 - 140
			4-Bromofluorobenzene	2009/06/11		102	%	60 - 140
			D10-Ethylbenzene	2009/06/11		92	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/11		99	%	60 - 140
			Benzene	2009/06/11		77	%	60 - 140
			Toluene	2009/06/11		77	%	60 - 140
			Ethylbenzene	2009/06/11		86	%	60 - 140
			o-Xylene	2009/06/11		89	%	60 - 140
			p+m-Xylene	2009/06/11		83	%	60 - 140
			F1 (C6-C10)	2009/06/11		102	%	60 - 140
1845070	APT	SRM	Acid Extractable Lead (Pb)	2009/06/12		94	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2009/06/12 4:15 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton

Report To Client Name: O'Connor Associates Environmental In
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T01
Task #: 11062583
Quote: A85084
COC/Submission #: 32582

TAT: 1 Days
Rush: Yes

Maxxam Job #: A969939

Received By: JIMMY LIU
Received: 2009/06/11 07:31

DQW #: 640
DQW Created By: EMA GITEJ
DQW Created: 2009/06/12 16:07

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CS9682	QA9	Soil	F1BTEXHS-S	F1BTEX	D10-Ethylbenzene	#5 Surrogate Recovery Above Control Limit	#15 No Repeat-Past Hold Time	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej
Date: 2009/06/12 16:09
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature: N. Haywood
Date: 2009/06/15
Name: NANCY HAYWOOD
Title: Project Manager

Data Quality Waiver Reviewed and Declined By:
Signature:
Date:
Name:
Title:

Comments / Requested Actions:

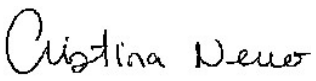
If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

Validation Signature Page

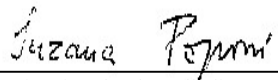
Maxxam Job #: A969939

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

BRAD NEWMAN, Scientific Specialist



CRISTINA NERVO, Scientific Services



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency? (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 32582

COMPANY NAME: O'CONNOR Associates (OA)	PH #: 613 742 1781 FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	EX1-WW7-3.0m	cs9679	S	3	09/06/10	1000	X	X	X					X										
2	EX1-WW8-3.0m	cs9680	S	3	09/06/10	1015	X	X	X					X										
3	TRENCH2-F1-0.5m	cs9681	S	3	09/06/10	1030	X	X	X					X										
4	QA9	cs9682	S	3	09/06/10	1000	X	X	X					X										
5	DISPENSER1-F1.0m	cs9683	S	3	09/06/10	900	X	X	X					X										
6	EX1-F27-4.0m	cs9684	S	3	09/06/10	1100	X	X	X					X										
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa	REGULATORY CRITERIA / DETECTION LIMITS: O.Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: -EDT -email job confirmation -test samples as per TOR
MAXXAM TASK ORDER #: 1062583		MAXXAM JOB #: A969939
IOL CONTACT: Scott Wetton		SAMPLES ENTERED BY: TL / HS

COOLER ID 1	CUSTODY SEAL yes	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 3 3 3 C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☐	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☒		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO PDA	09/06/10	17:30	HS	09/06/11	07:31
			HIRAL SOHI		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *10-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A969939*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The extraction surrogate recovery for D10-Ethylbenznene was 131% which is outside the QC limit (30-130%). All other lab QC have met acceptance criteria.*
Extraction Surrogate Recovery		*X*		
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples are within alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

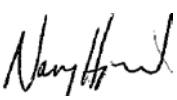
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *12-Jun-09* Date of Response: *15-Jun-09*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *27-Jul-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32586

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A970166
Received: 2009/06/11, 07:31

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	1	CAM SOP-00447	EPA 6020
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32586

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A970166
Received: 2009/06/11, 07:31

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

Encryption Key

Ema Gitej

17 Jun 2009 17:17:00 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A970166
Report Date: 2009/06/17

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CT0914		
Sampling Date		2009/06/10 12:45		
COC Number		32586		
	Units	**BF-1**	**RDL**	**QC Batch**
Moisture	%	4.0	0.2	1846951
Benzene	ug/g	<0.02	0.02	1846867
Toluene	ug/g	<0.02	0.02	1846867
Ethylbenzene	ug/g	<0.02	0.02	1846867
o-Xylene	ug/g	<0.02	0.02	1846867
p+m-Xylene	ug/g	<0.04	0.04	1846867
Total Xylenes	ug/g	<0.04	0.04	1846867
F1 (C6-C10)	ug/g	<10	10	1846867
F1 (C6-C10) - BTEX	ug/g	<10	10	1846867
F2 (C10-C16 Hydrocarbons)	ug/g	15	10	1846863
F3 (C16-C34 Hydrocarbons)	ug/g	15	10	1846863
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1846863
Reached Baseline at C50	ug/g	Yes		1846863
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	96		1846867
o-Terphenyl	%	84		1846863
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	99		1846867
4-Bromofluorobenzene	%	98		1846867
D4-1,2-Dichloroethane	%	100		1846867

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A970166
Report Date: 2009/06/17

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		CT0914		
Sampling Date		2009/06/10 12:45		
COC Number		32586		
	Units	**BF-1**	**RDL**	**QC Batch**
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	1849232
Acid Extractable Arsenic (As)	ug/g	1	1	1849232
Acid Extractable Barium (Ba)	ug/g	170	0.5	1849232
Acid Extractable Beryllium (Be)	ug/g	0.2	0.2	1849232
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	1849232
Acid Extractable Chromium (Cr)	ug/g	10	1	1849232
Acid Extractable Cobalt (Co)	ug/g	5.0	0.1	1849232
Acid Extractable Copper (Cu)	ug/g	11	0.5	1849232
Acid Extractable Lead (Pb)	ug/g	10	1	1849232
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	1849232
Acid Extractable Nickel (Ni)	ug/g	8.9	2.5	1849232
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	1849232
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	1849232
Acid Extractable Thallium (Tl)	ug/g	0.17	0.05	1849232
Acid Extractable Vanadium (V)	ug/g	6	5	1849232
Acid Extractable Zinc (Zn)	ug/g	11	5	1849232

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A970166
Report Date: 2009/06/17

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CT0914
Sample ID BF-1
Matrix Soil

Collected 2009/06/10
Shipped 2009/06/10
Received 2009/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1846867	2009/06/11	2009/06/15	ABD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1846863	2009/06/15	2009/06/15	ZZ
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	1849232	2009/06/17	2009/06/17	VIV
MOISTURE	BAL	1846951	N/A	2009/06/15	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A970166
Report Date: 2009/06/17

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Incorrect number of containers indicated on the C of C for sample BF1.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A970166

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1846863	ZZ	Method Blank	o-Terphenyl	2009/06/15		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/15	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/15	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/15	<10		ug/g	
1846867	ABD	Method Blank	1,4-Difluorobenzene	2009/06/15		100	%	60 - 140
			4-Bromofluorobenzene	2009/06/15		99	%	60 - 140
			D10-Ethylbenzene	2009/06/15		100	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/15		101	%	60 - 140
			Benzene	2009/06/15	<0.02		ug/g	
			Toluene	2009/06/15	<0.02		ug/g	
			Ethylbenzene	2009/06/15	<0.02		ug/g	
			o-Xylene	2009/06/15	<0.02		ug/g	
			p+m-Xylene	2009/06/15	<0.04		ug/g	
			Total Xylenes	2009/06/15	<0.04		ug/g	
			F1 (C6-C10)	2009/06/15	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/15	<10		ug/g	
1849232	VIV	Method Blank	Acid Extractable Antimony (Sb)	2009/06/17	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2009/06/17	<1		ug/g	
			Acid Extractable Barium (Ba)	2009/06/17	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2009/06/17	<0.2		ug/g	
			Acid Extractable Cadmium (Cd)	2009/06/17	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2009/06/17	<1		ug/g	
			Acid Extractable Cobalt (Co)	2009/06/17	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2009/06/17	<0.5		ug/g	
			Acid Extractable Lead (Pb)	2009/06/17	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2009/06/17	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2009/06/17	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2009/06/17	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2009/06/17	<0.2		ug/g	
			Acid Extractable Thallium (Tl)	2009/06/17	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2009/06/17	<5		ug/g	
			Acid Extractable Zinc (Zn)	2009/06/17	<5		ug/g	
1846863	ZZ	LCS	o-Terphenyl	2009/06/15		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/15		85	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/15		85	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/15		85	%	60 - 130
1846867	ABD	LCS	1,4-Difluorobenzene	2009/06/15		99	%	60 - 140
			4-Bromofluorobenzene	2009/06/15		99	%	60 - 140
			D10-Ethylbenzene	2009/06/15		92	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/15		106	%	60 - 140
			Benzene	2009/06/15		81	%	60 - 140
			Toluene	2009/06/15		86	%	60 - 140
			Ethylbenzene	2009/06/15		88	%	60 - 140
			o-Xylene	2009/06/15		87	%	60 - 140
			p+m-Xylene	2009/06/15		82	%	60 - 140
			F1 (C6-C10)	2009/06/15		98	%	60 - 140
1849232	VIV	SRM	Acid Extractable Antimony (Sb)	2009/06/17		98	%	75 - 125
			Acid Extractable Arsenic (As)	2009/06/17		100	%	75 - 125
			Acid Extractable Barium (Ba)	2009/06/17		102	%	75 - 125
			Acid Extractable Beryllium (Be)	2009/06/17		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2009/06/17		93	%	75 - 125
			Acid Extractable Chromium (Cr)	2009/06/17		92	%	75 - 125
			Acid Extractable Cobalt (Co)	2009/06/17		91	%	75 - 125
			Acid Extractable Copper (Cu)	2009/06/17		99	%	75 - 125
			Acid Extractable Lead (Pb)	2009/06/17		100	%	75 - 125

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A970166

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1849232	VIV	SRM	Acid Extractable Molybdenum (Mo)	2009/06/17		93	%	75 - 125
			Acid Extractable Nickel (Ni)	2009/06/17		92	%	75 - 125
			Acid Extractable Selenium (Se)	2009/06/17		117	%	50 - 150
			Acid Extractable Silver (Ag)	2009/06/17		87	%	75 - 125
			Acid Extractable Thallium (Tl)	2009/06/17		88	%	75 - 125
			Acid Extractable Vanadium (V)	2009/06/17		92	%	75 - 125
			Acid Extractable Zinc (Zn)	2009/06/17		94	%	75 - 125

QC Standard = Quality Control Standard

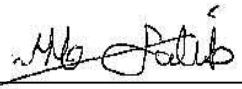
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

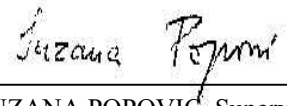
Maxxam Job #: A970166

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

BRAD NEWMAN, Scientific Specialist



MAMDOUH SALIB, Analyst, Hydrocarbons



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 32586

COMPANY NAME: O'Connor Associates (OA)

PH #: 613 742 1781
FAX #: 613 742 6064

COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa, ON K1J 1E9

CLIENT PROJECT ID: (#) 10-8518T01

SAMPLER NAME (PRINT): PIERRE D'ANGELO

PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BF-1	CT0914	S	3	09/06/10	1245	X	X	X							X								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 11062583

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- O.Reg 153/04
- Table 2

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TDG

MAXXAM JOB #: A970166

SAMPLES ENTERED BY: [illegible]/FW

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	Yes				
TEMP 3/3/3C	AVG	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO PDA	09/06/10	17:30	tg	09/06/11	07:31
			HIRAL SONI		

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	☒	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *10-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A970166*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *18-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32577

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A970752
Received: 2009/06/12, 07:35

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	1	CAM SOP-00447	EPA 6020
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 32577

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/06/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A970752
Received: 2009/06/12, 07:35

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

Encryption Key

Ema Gitej

18 Jun 2009 12:42:20 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A970752
Report Date: 2009/06/18

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CT3831	CT3831		
Sampling Date		2009/06/11 10:30	2009/06/11 10:30		
COC Number		32577	32577		
	Units	**BF-2**	**BF-2 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	4.6		0.2	1849585
Benzene	ug/g	<0.02	<0.02	0.02	1848772
Toluene	ug/g	0.07	0.07	0.02	1848772
Ethylbenzene	ug/g	<0.02	<0.02	0.02	1848772
o-Xylene	ug/g	<0.02	<0.02	0.02	1848772
p+m-Xylene	ug/g	0.06	0.05	0.04	1848772
Total Xylenes	ug/g	0.06	0.05	0.04	1848772
F1 (C6-C10)	ug/g	<10	<10	10	1848772
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	1848772
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	1849224
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	1849224
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1849224
Reached Baseline at C50	ug/g	Yes	Yes		1849224
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	118	118		1848772
o-Terphenyl	%	86	86		1849224
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	101	103		1848772
4-Bromofluorobenzene	%	103	105		1848772
D4-1,2-Dichloroethane	%	98	99		1848772

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A970752
Report Date: 2009/06/18

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		CT3831		
Sampling Date		2009/06/11 10:30		
COC Number		32577		
	Units	**BF-2**	**RDL**	**QC Batch**
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	1849232
Acid Extractable Arsenic (As)	ug/g	1	1	1849232
Acid Extractable Barium (Ba)	ug/g	160	0.5	1849232
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	1849232
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	1849232
Acid Extractable Chromium (Cr)	ug/g	7	1	1849232
Acid Extractable Cobalt (Co)	ug/g	3.7	0.1	1849232
Acid Extractable Copper (Cu)	ug/g	13	0.5	1849232
Acid Extractable Lead (Pb)	ug/g	8	1	1849232
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	1849232
Acid Extractable Nickel (Ni)	ug/g	7.4	2.5	1849232
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	1849232
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	1849232
Acid Extractable Thallium (Tl)	ug/g	0.19	0.05	1849232
Acid Extractable Vanadium (V)	ug/g	<5	5	1849232
Acid Extractable Zinc (Zn)	ug/g	8	5	1849232

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A970752
Report Date: 2009/06/18

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CT3831 **Collected** 2009/06/11
Sample ID BF-2 **Shipped** 2009/06/11
Matrix Soil **Received** 2009/06/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1848772	2009/06/12	2009/06/16	DCA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1849224	2009/06/17	2009/06/18	JKA
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	1849232	2009/06/17	2009/06/17	VIV
MOISTURE	BAL	1849585	N/A	2009/06/17	AC

Maxxam ID CT3831 Dup **Collected** 2009/06/11
Sample ID BF-2 **Shipped** 2009/06/11
Matrix Soil **Received** 2009/06/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1848772	2009/06/12	2009/06/16	DCA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1849224	2009/06/17	2009/06/18	JKA

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A970752
Report Date: 2009/06/18

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A970752

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1848772	DCA	Method Blank	1,4-Difluorobenzene	2009/06/16		103	%	60 - 140
			4-Bromofluorobenzene	2009/06/16		102	%	60 - 140
			D10-Ethylbenzene	2009/06/16		130	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/16		99	%	60 - 140
			Benzene	2009/06/16	<0.02		ug/g	
			Toluene	2009/06/16	<0.02		ug/g	
			Ethylbenzene	2009/06/16	<0.02		ug/g	
			o-Xylene	2009/06/16	<0.02		ug/g	
			p+m-Xylene	2009/06/16	<0.04		ug/g	
			Total Xylenes	2009/06/16	<0.04		ug/g	
			F1 (C6-C10)	2009/06/16	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/06/16	<10		ug/g	
1849224	JKA	Method Blank	o-Terphenyl	2009/06/17		84	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/17	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/17	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/17	<10		ug/g	
1849232	VIV	Method Blank	Acid Extractable Antimony (Sb)	2009/06/17	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2009/06/17	<1		ug/g	
			Acid Extractable Barium (Ba)	2009/06/17	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2009/06/17	<0.2		ug/g	
			Acid Extractable Cadmium (Cd)	2009/06/17	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2009/06/17	<1		ug/g	
			Acid Extractable Cobalt (Co)	2009/06/17	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2009/06/17	<0.5		ug/g	
			Acid Extractable Lead (Pb)	2009/06/17	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2009/06/17	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2009/06/17	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2009/06/17	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2009/06/17	<0.2		ug/g	
			Acid Extractable Thallium (Tl)	2009/06/17	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2009/06/17	<5		ug/g	
			Acid Extractable Zinc (Zn)	2009/06/17	<5		ug/g	
1848772	DCA	RPD [CT3831-03]	Benzene	2009/06/16	NC		%	50
			Toluene	2009/06/16	NC		%	50
			Ethylbenzene	2009/06/16	NC		%	50
			o-Xylene	2009/06/16	NC		%	50
			p+m-Xylene	2009/06/16	NC		%	50
			Total Xylenes	2009/06/16	NC		%	50
			F1 (C6-C10)	2009/06/16	NC		%	50
			F1 (C6-C10) - BTEX	2009/06/16	NC		%	50
1849224	JKA	RPD [CT3831-03]	F2 (C10-C16 Hydrocarbons)	2009/06/18	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/06/18	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/06/18	NC		%	50
1848772	DCA	MATRIX SPIKE [CT3831-03]	1,4-Difluorobenzene	2009/06/16		101	%	60 - 140
			4-Bromofluorobenzene	2009/06/16		105	%	60 - 140
			D10-Ethylbenzene	2009/06/16		128	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/16		101	%	60 - 140
			Benzene	2009/06/16		92	%	60 - 140
			Toluene	2009/06/16		92	%	60 - 140
			Ethylbenzene	2009/06/16		100	%	60 - 140
			o-Xylene	2009/06/16		106	%	60 - 140
			p+m-Xylene	2009/06/16		100	%	60 - 140
			F1 (C6-C10)	2009/06/16		86	%	60 - 140
1849224	JKA	MATRIX SPIKE [CT3831-03]	o-Terphenyl	2009/06/18		80	%	30 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A970752

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1849224	JKA	MATRIX SPIKE						
		[CT3831-03]	F2 (C10-C16 Hydrocarbons)	2009/06/18		84	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/18		84	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/18		84	%	60 - 130
1848772	DCA	LCS	1,4-Difluorobenzene	2009/06/16		100	%	60 - 140
			4-Bromofluorobenzene	2009/06/16		101	%	60 - 140
			D10-Ethylbenzene	2009/06/16		129	%	30 - 130
			D4-1,2-Dichloroethane	2009/06/16		100	%	60 - 140
			Benzene	2009/06/16		94	%	60 - 140
			Toluene	2009/06/16		96	%	60 - 140
			Ethylbenzene	2009/06/16		103	%	60 - 140
			o-Xylene	2009/06/16		110	%	60 - 140
			p+m-Xylene	2009/06/16		104	%	60 - 140
			F1 (C6-C10)	2009/06/16		93	%	60 - 140
1849224	JKA	LCS	o-Terphenyl	2009/06/18		79	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/18		84	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/18		84	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/18		84	%	60 - 130
1849232	VIV	SRM	Acid Extractable Antimony (Sb)	2009/06/17		98	%	75 - 125
			Acid Extractable Arsenic (As)	2009/06/17		100	%	75 - 125
			Acid Extractable Barium (Ba)	2009/06/17		102	%	75 - 125
			Acid Extractable Beryllium (Be)	2009/06/17		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2009/06/17		93	%	75 - 125
			Acid Extractable Chromium (Cr)	2009/06/17		92	%	75 - 125
			Acid Extractable Cobalt (Co)	2009/06/17		91	%	75 - 125
			Acid Extractable Copper (Cu)	2009/06/17		99	%	75 - 125
			Acid Extractable Lead (Pb)	2009/06/17		100	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2009/06/17		93	%	75 - 125
			Acid Extractable Nickel (Ni)	2009/06/17		92	%	75 - 125
			Acid Extractable Selenium (Se)	2009/06/17		117	%	50 - 150
			Acid Extractable Silver (Ag)	2009/06/17		87	%	75 - 125
			Acid Extractable Thallium (Tl)	2009/06/17		88	%	75 - 125
			Acid Extractable Vanadium (V)	2009/06/17		92	%	75 - 125
			Acid Extractable Zinc (Zn)	2009/06/17		94	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

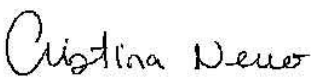
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

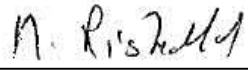
Maxxam Job #: A970752

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

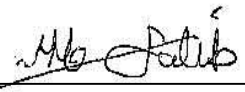
BRAD NEWMAN, Scientific Specialist



CRISTINA NERVO, Scientific Services



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



MAMDOUH SALIB, Analyst, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 32577

COMPANY NAME: O'CONNOR Associates (OA)	PH #: 613 742 1791
	FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Canotek Rd #104 Ottawa ON K1J 1E9	CLIENT PROJECT ID: (#) 10-8518701
SAMPLER NAME (PRINT): PIERRE D'ANGELO	PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BF-2	CT3831	S	4	09/06/11	1030	X	X	X							X								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 1106283

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- O. Reg 153/04
- Table 2

SPECIAL INSTRUCTIONS:
- EDT
- email job confirmation
- test samples as per TDG

MAXXAM JOB #: A970752

SAMPLES ENTERED BY: HS / AP

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	Yes				
TEMP 1, 1, 2°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☒	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
PIERRE D'ANGELO	09/06/11	18:00	AP.	09/06/12	7:35
			Alka Patel		

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *11-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A970752*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature):

Review Date: *18-Jun-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 35648

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/07/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A979152
Received: 2009/06/26, 11:05

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	1	CAM SOP-00447	EPA 6020
MOISTURE	1	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01
Your C.O.C. #: 35648

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2009/07/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A979152
Received: 2009/06/26, 11:05

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

Encryption Key

Ema Gitej

03 Jul 2009 18:02:48 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A979152
Report Date: 2009/07/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		CX4127		
Sampling Date		2009/06/24 15:30		
COC Number		35648		
	Units	**BF-3**	**RDL**	**QC Batch**
Moisture	%	2.8	0.2	1861974
Benzene	ug/g	<0.02	0.02	1863743
Toluene	ug/g	0.09	0.02	1863743
Ethylbenzene	ug/g	<0.02	0.02	1863743
o-Xylene	ug/g	0.03	0.02	1863743
p+m-Xylene	ug/g	0.09	0.04	1863743
Total Xylenes	ug/g	0.12	0.04	1863743
F1 (C6-C10)	ug/g	<10	10	1863743
F1 (C6-C10) - BTEX	ug/g	<10	10	1863743
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	1861954
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1861954
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1861954
Reached Baseline at C50	ug/g	Yes		1861954
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	105		1863743
o-Terphenyl	%	76		1861954
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	101		1863743
4-Bromofluorobenzene	%	99		1863743
D4-1,2-Dichloroethane	%	99		1863743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A979152
Report Date: 2009/07/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

O'REG 153 METALS BY ICPMS (SOIL)

Maxxam ID		CX4127		
Sampling Date		2009/06/24 15:30		
COC Number		35648		
	Units	**BF-3**	**RDL**	**QC Batch**
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	1861936
Acid Extractable Arsenic (As)	ug/g	2	1	1861936
Acid Extractable Barium (Ba)	ug/g	96	0.5	1861936
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	1861936
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	1861936
Acid Extractable Chromium (Cr)	ug/g	6	1	1861936
Acid Extractable Cobalt (Co)	ug/g	3.6	0.1	1861936
Acid Extractable Copper (Cu)	ug/g	11	0.5	1861936
Acid Extractable Lead (Pb)	ug/g	8	1	1861936
Acid Extractable Molybdenum (Mo)	ug/g	0.5	0.5	1861936
Acid Extractable Nickel (Ni)	ug/g	6.0	2.5	1861936
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	1861936
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	1861936
Acid Extractable Thallium (Tl)	ug/g	0.12	0.05	1861936
Acid Extractable Vanadium (V)	ug/g	<5	5	1861936
Acid Extractable Zinc (Zn)	ug/g	20	5	1861936

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A979152
Report Date: 2009/07/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Test Summary

Maxxam ID CX4127
Sample ID BF-3
Matrix Soil

Collected 2009/06/24
Shipped 2009/06/25
Received 2009/06/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1863743	2009/06/27	2009/07/02	GBA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1861954	2009/06/29	2009/06/30	ZZ
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	1861936	2009/06/29	2009/06/30	VIV
MOISTURE	BAL	1861974	N/A	2009/06/29	AC

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A979152
Report Date: 2009/07/03

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Metal analysis: On the Control Chart for Cu, 4 out of 5 points were above 1 sigma.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report

Maxxam Job Number: A979152

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1861936	VIV	Method Blank	Acid Extractable Antimony (Sb)	2009/06/30	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2009/06/30	<1		ug/g	
			Acid Extractable Barium (Ba)	2009/06/30	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2009/06/30	<0.2		ug/g	
			Acid Extractable Cadmium (Cd)	2009/06/30	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2009/06/30	<1		ug/g	
			Acid Extractable Cobalt (Co)	2009/06/30	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2009/06/30	<0.5		ug/g	
			Acid Extractable Lead (Pb)	2009/06/30	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2009/06/30	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2009/06/30	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2009/06/30	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2009/06/30	<0.2		ug/g	
			Acid Extractable Thallium (Tl)	2009/06/30	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2009/06/30	<5		ug/g	
			Acid Extractable Zinc (Zn)	2009/06/30	<5		ug/g	
1861954	ZZ	Method Blank	o-Terphenyl	2009/06/30		77	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/30	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2009/06/30	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2009/06/30	<10		ug/g	
1863743	GBA	Method Blank	1,4-Difluorobenzene	2009/07/02		102	%	60 - 140
			4-Bromofluorobenzene	2009/07/02		99	%	60 - 140
			D10-Ethylbenzene	2009/07/02		108	%	30 - 130
			D4-1,2-Dichloroethane	2009/07/02		102	%	60 - 140
			Benzene	2009/07/02	<0.02		ug/g	
			Toluene	2009/07/02	<0.02		ug/g	
			Ethylbenzene	2009/07/02	<0.02		ug/g	
			o-Xylene	2009/07/02	<0.02		ug/g	
			p+m-Xylene	2009/07/02	<0.04		ug/g	
			Total Xylenes	2009/07/02	<0.04		ug/g	
			F1 (C6-C10)	2009/07/02	<10		ug/g	
			F1 (C6-C10) - BTEX	2009/07/02	<10		ug/g	
1861954	ZZ	LCS	o-Terphenyl	2009/06/30		74	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2009/06/30		72	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2009/06/30		72	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2009/06/30		72	%	60 - 130
1863743	GBA	LCS	1,4-Difluorobenzene	2009/07/02		101	%	60 - 140
			4-Bromofluorobenzene	2009/07/02		100	%	60 - 140
			D10-Ethylbenzene	2009/07/02		103	%	30 - 130
			D4-1,2-Dichloroethane	2009/07/02		104	%	60 - 140
			Benzene	2009/07/02		86	%	60 - 140
			Toluene	2009/07/02		89	%	60 - 140
			Ethylbenzene	2009/07/02		94	%	60 - 140
			o-Xylene	2009/07/02		93	%	60 - 140
			p+m-Xylene	2009/07/02		92	%	60 - 140
			F1 (C6-C10)	2009/07/02		91	%	60 - 140
1861936	VIV	SRM	Acid Extractable Antimony (Sb)	2009/06/30		92	%	75 - 125
			Acid Extractable Arsenic (As)	2009/06/30		95	%	75 - 125
			Acid Extractable Barium (Ba)	2009/06/30		94	%	75 - 125
			Acid Extractable Beryllium (Be)	2009/06/30		91	%	75 - 125
			Acid Extractable Cadmium (Cd)	2009/06/30		89	%	75 - 125
			Acid Extractable Chromium (Cr)	2009/06/30		90	%	75 - 125
			Acid Extractable Cobalt (Co)	2009/06/30		92	%	75 - 125
			Acid Extractable Copper (Cu)	2009/06/30		103	%	75 - 125
			Acid Extractable Lead (Pb)	2009/06/30		98	%	75 - 125

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11062583
Site#:
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T01

Quality Assurance Report (Continued)

Maxxam Job Number: A979152

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1861936	VIV	SRM	Acid Extractable Molybdenum (Mo)	2009/06/30		88	%	75 - 125
			Acid Extractable Nickel (Ni)	2009/06/30		90	%	75 - 125
			Acid Extractable Selenium (Se)	2009/06/30		103	%	50 - 150
			Acid Extractable Silver (Ag)	2009/06/30		102	%	75 - 125
			Acid Extractable Thallium (Tl)	2009/06/30		92	%	75 - 125
			Acid Extractable Vanadium (V)	2009/06/30		93	%	75 - 125
			Acid Extractable Zinc (Zn)	2009/06/30		93	%	75 - 125

QC Standard = Quality Control Standard

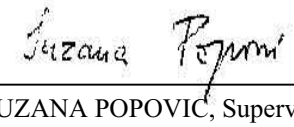
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A979152

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

BRAD NEWMAN, Scientific Specialist



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 35648

COMPANY NAME: O'Connor Associates (OA)
PH #: 613 742 1781
FAX #: 613 742 6064
COMPANY ADDRESS: 5420 Conroy Rd #104 Ottawa, ON K1J 1E9
CLIENT PROJECT ID: (#) 10-8518-T01
SAMPLER NAME (PRINT): PIERRE D'ANGELO
PROJECT MANAGER: NANCY HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BF-3	CX4127	S	4	09/06/24	1530	X	X	X							X								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa, ON
MAXXAM TASK ORDER #: 11062583
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 2

SPECIAL INSTRUCTIONS:
- EDT
- Email job confirmation
- hst samples as per TOR

MAXXAM JOB #: A979152
SAMPLES ENTERED BY: (MC) 7C

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 2/3/4°C	AVG YES	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL / WATER			AIR - SUMMA CANISTERS	
Standard	(5 days)	X	Standard	(15 days) ☐
Rush	(3 days)	☐	Rush	(9 days) ☐
	(2 days)	☐		(6 days) ☐
	(1 day)	☐		(3 days) ☐
	(same day)	☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
Pierre D'Angelo	09/06/25	12:00	Zofia Zofia Zenetta	09/06/26	11:05

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *24-Jun-09*

Location: *1545 Woodroffe Ave., Ottawa, ON* Laboratory : *Maxxam Analytics, Mississauga*

Consultant Project Number: *10-8518T01* Sample Submission Number: *A979152*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field duplicate in this lab submission*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

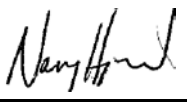
Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N.Haywood* Data Reviewed by (Signature): 

Review Date: *3-Jul-09*

Revision Date (if applicable): *N/A* Revised by (Signature): N/A

APPENDIX D

ANALYTICAL RESULTS – SOILS REMOVED FROM THE SITE

TABLE D-I (Page 1 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
SOILS REMOVED FROM SITE
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS								STANDARDS
	DISPENSER 1 - F0.5M	EX1-F19-4.0M	EX1-WW6-3.0M	QA6 Duplicate-EX1-WW6-3.0M	SP-5	SP-7	SP-11	SP-13	TABLE 3[a]
Depth (m)	0.5	4	3	3					
Date Sampled	2009/05/21	2009/05/28	2009/06/01	2009/06/01	2009/05/26	2009/05/28	2009/06/01	2009/06/02	
Soil Vapour Concentration (ppm or % LEL)	200	5%	>100%	-	>100%	>100%	15%	40%	NV
Moisture Content (%)	11	24	18	19	19	16	25	21	NV
Benzene	<0.02	0.64	**28**	7.9	5.4	1.9	1.3	0.89	25
Toluene	<0.02	20	**510**	**170**	150	8.8	3.4	17	150
Ethylbenzene	<0.02	22	220	83	61	9.1	8.9	11	1000
m,p-Xylenes	0.15	110	840	310	300	34	23	43	NV
o-Xylene	0.13	54	350	130	120	15	7.5	17	NV
Total Xylenes	0.28	160	**1200**	**440**	**420**	50	30	60	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	73	640	**5500**	**2000**	**1400**	180	75	300	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	**6900**	150	**1700**	1000	1100	48	72	150	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	**6000**	15	77	64	33	13	62	52	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	21	<10	6600
Lead	110	11	<5	<5	17	9	<5	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NV - No Value
- - Not available
BOLD - Exceeds selected criterion.

TABLE D-I (Page 2 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS
SOILS REMOVED FROM SITE
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS							STANDARDS
	TP1-2.0M	TP1-2.5M	TP1-3.5M	QA1 Duplicate-TP1-3.5M	TP2-1.0M	TP2-2.0M	TP2-3.0M	TABLE 3[a]
Depth (m)	2.0	2.5	3.5	3.5	1.0	2.0	3.0	
Date Sampled	2009/05/11	2009/05/11	2009/05/11	2009/05/11	2009/05/11	2009/05/11	2009/05/11	
Soil Vapour Concentration (ppm or % LEL)	10%	15%	100%	-	5%	30%	80%	NV
Moisture Content (%)	63	20	24	29	18	58	21	NV
Benzene	4.3	<0.02	7.7	3.3	0.07	29	1.7	25
Toluene	0.12	<0.02	22	2.6	0.92	2.8	7.2	150
Ethylbenzene	13	0.09	43	4.4	0.43	62	3.6	1000
m,p-Xylenes	2.2	0.36	160	17	7.2	210	14	NV
o-Xylene	0.93	0.13	62	6.8	4.0	59	5.6	NV
Total Xylenes	3.2	0.48	220	23	11	270	19	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	250	16	1900	180	57	800	61	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	72	100	2400	600	220	130	62	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	180	78	1200	310	19	220	11	2500
Petroleum Hydrocarbons F4 (>C34)	270	<10	<10	<10	14	340	<10	6600
Lead	11	<5	7	8	5	7	6	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NV - No Value
- - Not available
BOLD - Exceeds selected criterion.

O'CONNOR ASSOCIATES

APPENDIX E

QUALITY ASSURANCE AND QUALITY CONTROL

Quality Assurance and Quality Control Discussion

Relative percent difference (RPD) calculations for field duplicate soil samples are summarized in Table E-1. Consistent with laboratory practices, meaningful RPD values for field duplicate analyses were only calculated where detected concentrations in both samples were greater than five (5) times the laboratory reportable detection limit (RDL). The laboratory and field QC were generally within acceptance criteria and alert limits. Specific deviations are identified and discussed in Table E-II. Overall, laboratory and field QC results confirm that sample handling and analytical protocols were generally acceptable, and the results were reproducible.

TABLE E-I (Page 1 of 5)

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL SAMPLES
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETER	SAMPLE LOCATION				RPD	SAMPLE LOCATION				RPD	STANDARD
	TP1-3.5M	RDL	QA1 Duplicate-TP1-3.5M	RDL		PAD3-F2-0.3M	RDL	QA2 Duplicate-PAD3-F2-0.3M	RDL		RPD LIMITS (%)[a]
Depth (m)	3.5		3.5			0.3		0.3			
Date Sampled	2009/05/11		2009/05/11			2009/05/14		2009/05/14			
Benzene	7.7	0.2	3.3	0.02	Acceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Toluene	22	0.2	2.6	0.02	Unacceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Ethylbenzene	43	0.2	4.4	0.02	Unacceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
m&p-Xylene	160	0.4	17	0.04	Unacceptable	<0.04	0.04	0.04	0.04	Not Calculable	100
o-Xylene	62	0.2	6.8	0.02	Unacceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	1900	100	180	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	2400	10	600	10	Unacceptable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	1200	10	310	10	Unacceptable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F4 (>C34)	<10	10	<10	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Lead	7	5	8	5	Not Calculable	6	5	<5	5	Not Calculable	100

a - Acceptance Criteria for Field Duplicate RPD
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are equal to or less than 5X RDL)

TABLE E-I (Page 2 of 5)

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL SAMPLES
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETER	SAMPLE LOCATION				RPD	SAMPLE LOCATION				RPD	STANDARD
	EX1-SW3-4.5M	RDL	QA3	RDL		EX1-EW2-4.0M	RDL	QA4	RDL		
			Duplicate-EX1-SW3-4.5M					Duplicate-EX1-EW2-4.0M			RPD LIMITS (%)[a]
Depth (m)	4.5		4.5			4.0		4.0			
Date Sampled	2009/05/21		2009/05/21			2009/05/27		2009/05/27			
Benzene	<0.02	0.02	<0.02	0.02	Not Calculable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Toluene	<0.02	0.02	<0.02	0.02	Not Calculable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Ethylbenzene	0.05	0.02	<0.02	0.02	Not Calculable	<0.02	0.02	<0.02	0.02	Not Calculable	100
m&p-Xylene	0.07	0.04	<0.04	0.04	Not Calculable	<0.04	0.04	<0.04	0.04	Not Calculable	100
o-Xylene	<0.02	0.02	<0.02	0.02	Not Calculable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	10	<10	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	10	210	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	10	20	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F4 (>C34)	<10	10	<10	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Lead	7	5	7	5	Not Calculable	6	5	7	5	Not Calculable	100

a - Acceptance Criteria for Field Duplicate RPD
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are equal to or less than 5X RDL)

O'CONNOR ASSOCIATES

TABLE E-I (Page 3 of 5)

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL SAMPLES
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETER	SAMPLE LOCATION				RPD	SAMPLE LOCATION				RPD	STANDARD
	EX1-WW3-3.0M	RDL	QA5 Duplicate-EX1-WW3-3.0M	RDL		EX1-WW6-3.0M	RDL	QA6 Duplicate-EX1-WW6-3.0M	RDL		RPD LIMITS (%)[a]
Depth (m)	3.0		3.0			3.0		3.0			
Date Sampled	2009/05/29		2009/05/29			2009/06/01		2009/06/01			
Benzene	2.3	0.02	1.8	0.02	Acceptable	28	0.8	7.9	0.2	Unacceptable	100
Toluene	11	0.02	8.2	0.02	Acceptable	510	0.8	170	0.2	Acceptable	100
Ethylbenzene	9.7	0.02	6.6	0.02	Acceptable	220	0.8	83	0.2	Acceptable	100
m&p-Xylene	33	0.04	23	0.04	Acceptable	840	2	310	0.4	Acceptable	100
o-Xylene	13	0.02	9.3	0.02	Acceptable	350	0.8	130	0.2	Acceptable	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	97	10	59	10	Acceptable	5500	400	2000	100	Acceptable	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	55	10	14	10	Not Calculable	1700	10	1000	10	Acceptable	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	12	10	<10	10	Not Calculable	77	10	64	10	Acceptable	100
Petroleum Hydrocarbons F4 (>C34)	<10	10	<10	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Lead	8	5	6	5	Not Calculable	<5	5	<5	5	Not Calculable	100

a - Acceptance Criteria for Field Duplicate RPD
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are equal to or less than 5X RDL)

TABLE E-I (Page 4 of 5)

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL SAMPLES
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETER	SAMPLE LOCATION				RPD	SAMPLE LOCATION				RPD	STANDARD
	EX2-NW2-4.0M	RDL	QA7 Duplicate-EX2-NW2-4.0M	RDL		EX2-EW3-3.0M	RDL	QA8 Duplicate-EX2-EW3-3.0M	RDL		RPD LIMITS (%)[a]
Depth (m)	4.0		4.0			4.0		4.0			
Date Sampled	2009/06/03		2009/06/03			2009/06/05		2009/06/05			
Benzene	4.4	0.02	3.6	0.02	Acceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Toluene	10	0.02	6.3	0.02	Acceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Ethylbenzene	3.4	0.02	1.5	0.02	Acceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
m&p-Xylene	13	0.04	5.6	0.04	Acceptable	<0.04	0.04	<0.04	0.04	Not Calculable	100
o-Xylene	5.2	0.02	2.4	0.02	Acceptable	<0.02	0.02	<0.02	0.02	Not Calculable	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	78	10	35	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	260	10	160	10	Acceptable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	130	10	96	10	Acceptable	<10	10	<10	10	Not Calculable	100
Petroleum Hydrocarbons F4 (>C34)	<10	10	<10	10	Not Calculable	<10	10	<10	10	Not Calculable	100
Lead	10	5	10	5	Not Calculable	<5	5	<5	5	Not Calculable	100

a - Acceptance Criteria for Field Duplicate RPD
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are equal to or less than 5X RDL)

TABLE E-I (Page 5 of 5)

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL SAMPLES
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETER	SAMPLE LOCATION				RPD	STANDARD
	EX1-WW7-3.0M	RDL	QA9	RDL		
			Duplicate-EX1-WW7-3.0M			RPD LIMITS (%)[a]
Depth (m)	3.0		3.0			
Date Sampled	2009/06/10		2009/06/10			
Benzene	3.4	0.2	1.4	0.2	Acceptable	100
Toluene	35	0.2	15	0.2	Acceptable	100
Ethylbenzene	35	0.2	28	0.2	Acceptable	100
m&p-Xylene	110	0.4	100	0.4	Acceptable	100
o-Xylene	35	0.2	27	0.2	Acceptable	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	760	100	730	100	Acceptable	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	330	10	290	10	Acceptable	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	41	10	61	10	Not Calculable	100
Petroleum Hydrocarbons F4 (>C34)	<10	10	<10	10	Not Calculable	100
Lead	<5	5	<5	5	Not Calculable	100

a - Acceptance Criteria for Field Duplicate RPD
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are equal to or less than 5X RDL)

TABLE E-II (Page 1 of 2)

DISCUSSION OF FIELD AND LABORATORY QA/QC RESULTS

Maxxam ID	DQW #	Matrix	Sample ID	Test Affected	Deviation	Interpretation
A955527	NA	Soil	TP1-3.5M(QA1)	Toluene Ethylbenzene m&p-xylene o-xylene	Field duplicate RPD exceeded alert limit (>100%)	Variance in analytical results is potentially due to sample heterogeneity. The variance does not materially effect the conclusions based on the data.
A961835	615	Soil	SP-5 SP-6	D-10 Ethylbenzene Ethylbenzene m&p-xylene o-xylene Toluene Total xylenes	The extraction surrogate recovery was for D-10 Ethylbenzene for sample SP-5 was 137% which is outside the QC limit (30-130%). The toluene, ethylbenzene and total xylenes duplicate RPD in sample results for SP-6 (55, 60 and 57%) exceed acceptance criteria (50%).	The extraction surrogate recovery was above the upper control limit due to the level of niative hydrocarbon present in the sample, which may increase the uncertainty of the results. Variance in analytical results for SP-6 is potentially due to sample heterogeneity. The high bias and variance does not materially effect the conclusions based on the data.
A963819	619	Soil	EX1-WW1-3.0M	D-10 Ethylbenzene	The extraction surrogate recovery for D10-Ethylbenznene was 130% which is at the upper QC limit (130%).	The extraction surrogate recovery was at the upper control limit due to the level of niative hydrocarbon present in the sample, which may increase the uncertainty of the results. The high bias does not materially effect the conclusions based on the data.
A963823	620	Soil	EX1-F19-4.0M	D-10 Ethylbenzene	The extraction surrogate recovery for D10-Ethylbenznene was 143% which is above the upper QC limit (130%).	The extraction surrogate recovery was above the upper control limit due to the level of niative hydrocarbon present in the sample, which may increase the uncertainty of the results. The high bias does not materially effect the conclusions based on the data.

TABLE E-II (Page 2 of 2)

DISCUSSION OF FIELD AND LABORATORY QA/QC RESULTS

Maxamm ID	DQW #	Matrix	Sample ID	Test Affected	Deviation	Interpretation
A964785	624	Soil	EX1-WW6-3.0m QA6	D-10 Ethylbenzene	The extraction surrogate recovery for D10-Ethylbenznene was 321 and 160% which is above the upper QC limit (130%). Field duplicate RPD exceeded alert limit (>100%).	The extraction surrogate recovery was above the upper control limit due to the level of niative hydrocarbon present in the sample, which may increase the uncertainty of the results. Variance in analytical results for SP-6 is potentially due to sample heterogeneity. The high bias and variance does not materially effect the conclusions based on the data.
A967022	629	Soil	EX2-NW4-3.0M	D-10 Ethylbenzene	The extraction surrogate recovery for D10-Ethylbenznene was 165% which is above the upper QC limit (130%). Field duplicate RPD exceeded alert limit (>100%).	The extraction surrogate recovery was above the upper control limit due to the level of niative hydrocarbon present in the sample, which may increase the uncertainty of the results. The high bias does not materially effect the conclusions based on the data.
A967799	635	Soil	SP-15	Total xylenes	The total xylenes duplicate RPD results (68%) exceed acceptance criteria (50%).	Variance in analytical results is potentially due to sample heterogeneity. The variance does not materially effect the conclusions based on the data.
A969939	640	Soil	QA9	D-10 Ethylbenzene	The extraction surrogate recovery for D10-Ethylbenznene was 131% which is above the upper QC limit (130%).	The extraction surrogate recovery was above the upper control limit due to the level of niative hydrocarbon present in the sample, which may increase the uncertainty of the results. The high bias does not materially effect the conclusions based on the data.

FINAL REPORT

PHASE I ENVIRONMENTAL SITE ASSESSMENT

1545 WOODROFFE AVENUE, NEPEAN, ONTARIO

PREPARED FOR:

IMPERIAL OIL LIMITED

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE.

These documents and the information contained therein are confidential, property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-83, c. 111, Sch. II "1", and the Access to Information Act (Canada) 1980-81-82-83, c. 111, Sch. I "1", as such legislation may be amended from time to time.

SNC-LAVALIN INC.

July 2015

FINAL REPORT

Project n°628494

COMMITMENT TO QUALITY

To demonstrate its commitment to the importance of quality, its priority to meet the requirements of its clients and its commitment to continuous improvement, the Environment & Water Business Unit of SNC-Lavalin Inc. has developed a Quality Policy and a Quality Management System tailored to its activities.

At Environment & Water, we place a high value on our clients, the environment, and the communities in which we work. We apply our Quality Management Systems consistently, and continually work to improve them. Hence, we recognize that the quality of our services is based upon:

- Safely executing our work;
- Collecting information in a systematic way that avoids introduction of bias;
- Providing deliverables that are technically sound, clear and concise;
- Meeting deadlines;
- Delivering projects on budget;
- Providing invoices that are timely, clear and accurate;
- Providing a highly competent team.

At Environment & Water, we understand that our clients' satisfaction is vital to our business success. We strive to be a full partner in delivering sustainable projects and endeavour to exceed our clients' expectations.

Our quality management system is based on this Policy which is reviewed annually during the Quality Management Review. All the Environment & Water staff are conscious of this statement and understand the importance of its application in the business's operations.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

EXECUTIVE SUMMARY

SITE LOCATION

Imperial retail fuel facility, 1545 Woodroffe Avenue, Nepean, Ontario

CURRENT PROPERTY OWNER

Imperial Oil Limited (leased to The TDL Group Ltd.)

SITE SUMMARY

Site Summary Information	
Former Property Use(s)	Property use was vacant and possibly used for agricultural purposes until circa 1957. At least a portion of the site has been owned by Imperial Oil Limited since 1957. The site was operated as a service station from circa 1957 to 1993. Retail fuel operations began in the early 1980s. Former site infrastructure during this time included: - Six (6) USTs (2 x 13,600 and 3 x 22,700 L for gasoline and 1 x 13,600 L for diesel) in southwest portion of the site (installed in the 1980s and removed in 2009); - One (1) 2,273 furnace oil UST (removed in 2009); - One (1) garage building in southwest portion of the site; - Possible canopy located west of the building; and, - The current Tim Horton's restaurant building operated as a service garage with four (4) service bays between 1983 and 1993.
Most Recent Property Use	The site has operated as a retail fuel outlet in its current configuration since circa 2009. Infrastructure at the time of the site visit included: - Four (4) USTs (3x 50,000 L double wall fiberglass for gasoline and 1 x 25,000 L double wall fiberglass for diesel) - Concrete slab with five (5) fuel dispensers covered by a canopy; - Convenience store kiosk building; - Drive-through car wash; - Tim Horton's restaurant building (former garage); - Possible in-situ treatment system trailer; - One (1) metal clad shed; and, - One (1) box transformer. Site redevelopment including source removal of impacted soil is planned for 2015. Once redevelopment activities are completed the CMP in place for the site is to be revised and reviewed.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

Site Summary Information	
Zoning	GM15 H(9.5) – General Mixed Use
Groundwater usage	The site and developed properties located within 250 m of the site are supplied by a municipal drinking-water system. Wells for unknown use have been identified within 250 metres of the site.
Surface water drainage	The site is paved and drainage is via overland flow to onsite and offsite catch basins which drain to the municipal sewer system.
Nearest surface water body	The Nepean Creek is located approximately 680 m south of the site.
Previous Reports	Eleven (11) environmental reports were reviewed.
Geology	Based on available information, surficial geology in the area is characterized by glaciomarine and marine deposits: sand, gravelly sand and gravel; nearshore and beach deposits. Bedrock in the area consists of dolostone and sandstone.

Based on a review of the site and surrounding property information, the following onsite and offsite APECs and PCOCs have been identified.

SUMMARY OF APECS AND PCOCS

Onsite APECs	Area	PCOCs	
		Soil	Groundwater
Current and historical retail fuel storage and dispensing (including tank nest, pump islands, spills known soil and groundwater impacts and possible remediation system)	Southwest portion of site	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH
Car wash	East portion of site	BTEX, PHC F1 to F4, 1,2 DBA, 1,2 DCA, MTBE, selected metals (arsenic, barium, chromium, copper, lead and zinc) and PAH	BTEX, PHC F1 to F4, 1,2 DBA, 1,2 DCA, MTBE, selected metals (arsenic, barium, chromium, copper, lead and zinc) and PAH

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

Onsite APECs	Area	PCOCs	
		Soil	Groundwater
Former service bay (automotive repairs)	Northeast and southwest portions of site	BTEX, PHC F1 to F4, VOC, selected metals (arsenic, barium, chromium, copper, lead and zinc), PAH and PCB	BTEX, PHC F1 to F4, VOC, selected metals (arsenic, barium, chromium, copper, lead and zinc), PAH and PCB
Transformer box	West portion of site	PCB	PCB
Fill of Unknown Origin	Throughout site	BTEX, PHC F1 to F4, Metals and PAH	BTEX, PHC F1 to F4, Metals and PAH (subject to soil results)

Offsite APECs	Address	PCOCs	
		Soil	Groundwater
Known soil and groundwater impacts	Road allowance (adjacent to south)	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH
Transformer (box and pole mounted)	Road allowance (adjacent to southwest)	PCB	PCB
Registered generator of light fuels, paint, aliphatic solvents and waste oils	72A/ G Brockington Cres. (north and/ or east of site)	None – no records indicating improper storage, handling or disposal were found.	None – no records indicating improper storage, handling or disposal were found.

BTEX = benzene, toluene, ethylbenzene, and xylenes
PHC F1 to F4 = petroleum hydrocarbon fractions in the F1 to F4 ranges
Pb = lead (a gasoline additive)
1,2 DBA = 1,2 dibromoethane (a lead scavenger)
1,2 DCA = 1,2 dichloroethane (a lead scavenger)
MTBE = methyl tertiary butyl ether (a gasoline additive)
PAH = polycyclic aromatic hydrocarbons
VOC = volatile organic compounds
PCB = polychlorinated biphenyls

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

TABLE OF CONTENTS

Page

1 INTRODUCTION 1
1.1 SCOPE OF WORK 1
2 SITE DESCRIPTION 2
3 RECORDS REVIEW 3
3.1 ENVIRONMENTAL REPORTS 4
3.2 GENERAL 5
3.2.1 Fire Insurance Plans 5
3.2.2 Chain of Title 5
3.2.3 Municipal Directories 6
3.3 ENVIRONMENTAL SOURCE INFORMATION 6
3.3.1 ERIS Database Information 6
3.3.2 MOECC Freedom of Information (FOI) Request 9
3.3.3 Technical Standards and Safety Authority 9
3.3.4 Aerial Photographs 11
3.4 PHYSICAL SETTING 13
3.4.1 Species at Risk 13
3.4.2 Well Records 13
3.5 COMPANY RECORDS 14
4 SITE RECONNAISSANCE & INTERVIEWS 15
4.1 SITE RECONNAISSANCE 15
4.2 INTERVIEWS 18
5 POTENTIAL SENSITIVE RECEPTOR SURVEY 19
6 REVIEW AND EVALUATION OF INFORMATION 20
6.1 CURRENT AND PAST USES 20
6.2 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN 21
6.2.1 Onsite APECs 21

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

6.2.2 Offsite APECs 22
7 CONCLUSIONS 23
8 LIMITATIONS 24
8.1 LIMITATIONS AND EXCEPTIONS OF THE ASSESSMENT 24
8.2 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE 24
9 REFERENCES 26

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

LIST OF FIGURES

Figure 1 Site Location Plan
Figure 2 Site Plan with Current Infrastructure
Figure 3 Current and Historical Property Use

LIST OF APPENDICES

Appendix A Zoning Information
Appendix B Previous Investigations
Appendix C RMS/HEIRS™ Report (Fire Insurance Plans)
Appendix D Land Title Records
Appendix E Municipal Directories Report
Appendix F EcoLog ERIS Report
Appendix G Freedom of Information Records
Appendix H Technical Standards and Safety Authority Records
Appendix I Aerial Photographs
Appendix J Physical Setting
Appendix K Species at Risk
Appendix L Well Record Search Results
Appendix M Company Records
Appendix N Site Photographs
Appendix O Sensitive Receptor Survey

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

1 INTRODUCTION

The Environment & Water business unit of SNC-Lavalin Inc. (SNC-Lavalin) was retained by Imperial Oil Limited (Imperial) to conduct a Phase I Environmental Site Assessment (ESA) of the Imperial retail fuel facility located at 1545 Woodroffe Avenue, Nepean, Ontario. Historical information for the Phase I ESA was gathered between May and July 2015 including a site visit on June 25, 2015.

The purpose of this Phase I ESA was to identify current and past activities on the Imperial site and on surrounding properties that may have impacted soil or groundwater quality at the site.

1.1 SCOPE OF WORK

The Phase I work program was based on the Canadian Standards Association (CSA) "Phase I Environmental Site Assessment" Standard Z768-01 (CSA, 2012).

To meet the objective described above, SNC-Lavalin completed the following tasks:

- Provided a site description including legal description and zoning information.
- Reviewed available records, including historical and regulatory information.
- Conducted interviews with individuals knowledgeable about the site.
- Conducted site reconnaissance to observe the current condition of the site and surrounding properties.
- Conducted a sensitive receptor survey.
- Reviewed and evaluated information gathered during this investigation.
- Prepared this Phase I ESA report documenting the activities, findings and conclusions.

References and the limitations of the investigation are presented at the end of this report.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

2 SITE DESCRIPTION

The Phase I Property (referred to as the "site" in this report) is located at 1545 Woodroffe Avenue in the City of Nepean, Ontario. The Imperial retail fuel facility is located northeast of the intersection of Woodroffe Avenue and Medhurst Drive.

The following table provides a summary of general information for the site regarding the site location, legal description, ownership and municipal zoning. The information is based on review of background information provided by Imperial and/or other sources as referenced below. The site location and current site layout are illustrated in Figures 1 and 2. Adjacent properties are shown in Figure 3.

Item	Description
Municipal Address	1545 Woodroffe Avenue, Nepean, ON
Property Size	8,261 m^2
Legal Description	Part of Road Allowance Between Lots 30 & 31, Concession 1 Rideau Front, Part 1 on 4R-3336; Nepean and Consolidation of Various Properties Part of Lot 30, Concession 1, Rideau Front as in CR362577 & Part 1 on Plan 5R-4787, except Part 1, Plan 5R-5400 & CR363009; Nepean
PIN	04657-0590 and 04657-0604
Owner of the Site	Imperial Oil Limited
Easements, Agreements & Encumbrances	Lease to The TDL Group Ltd. with lease term from 1995 to February 2015. Discharge/surrender of lease could not be confirmed.
UTM Co-ordinates	Easting: 441096 Northing: 5020395 NAD 83, Zone 18
Zoning (Appendix A):	
Site Zoning	GM15 H(9.5) – General Mixed Use (City of Ottawa, Zoning By-law 2008-250)
Site Zoning Permitted Uses	Commercial uses including automobile service station, car wash and gas bar.
Zoning for Surrounding Areas	North: R3WW (Residential Third Density Zone) East: R3WW (Residential Third Density Zone) South: O1P (Parks and Open Space Zone - Hydro Corridor Subzone) West: R2M and R3Z[937] (Residential Second Density Zone and Residential Third Density Zone)

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

3 RECORDS REVIEW

SNC-Lavalin conducted a review of historical and environmental records relating to the site and surrounding properties to identify evidence of actual or potential contamination in connection with the site. The following information sources were reviewed:

Previous Environmental Investigations

Eleven (11) historical environmental investigations were provided by Imperial for review.

General Site Information

- **Fire Insurance Plans** – OPTA information intelligence (OPTA) was contracted to obtain site underwriters' fire insurance plans, site plans and inspection reports through OPTA Historical Environmental Services Enviroscan™ (Enviroscan) for the site and adjacent properties.
- **Chain of Title** - SNC-Lavalin contracted Select Conveyancing Ltd. of Ottawa, Ontario to provide a legal description of the site and complete a chain of title review from present to Crown ownership or dating back 50 years for the site. Chain of title searches were also conducted for adjacent properties as warranted to identify activities on adjacent properties with the potential to impact soil and/or groundwater at the site. The chains of title were reviewed to identify previous property owners and to assist in identifying previous site activities and development.
- **Municipal Directories** – To assess previous property uses, SNC-Lavalin contracted OPTA to provide a summary of site occupancy for the site based on municipal directories. Municipal directories were reviewed for adjacent properties where available and as warranted to identify activities on adjacent properties with the potential to impact soil and/or groundwater at the site.

Environmental Source Information

- **EcoLog ERIS Database Information** - ERIS was retained to conduct a search of sixty-two (62) publicly available government and private source databases for the site and properties within 250 m of the site.
- **Ontario Ministry of the Environment and Climate Change Freedom of Information Request** - A request was submitted under the Freedom of Information and Protection of Privacy Act (FOIPPA) to the Ontario Ministry of the Environment and Climate Change (MOECC) to obtain documents in their files pertaining to the site.
- **Technical Standards and Safety Authority Records** – A request was submitted to the Technical Standards and Safety Authority (TSSA) for copies of all records in their files pertaining to the site.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

Physical Setting Sources

- **Aerial Photographs** – Historical aerial photographs depicting the site and surrounding properties were obtained through the National Air Photo Library (operated by Natural Resources Canada). Specific aerial photographs were selected for review to identify and illustrate:
  - Property use and development history at the site
  - The locations of buildings and structures present at the site during the time period for which aerial photograph coverage is available
  - Activities on the site or near the site with the potential to impact soil or groundwater quality at the site
- **Topography and Water Bodies** - Available topographic maps were referenced to describe the regional topography and to identify surface water bodies in the area of the site. This included Natural Resources Canada Atlas of Canada Topographic Maps (available at http://atlas.nrcan.gc.ca/site/english/toporama/index.html).
- **Geology and Hydrogeology** - Available geologic maps that include the site and surrounding properties were reviewed to provide a description of the regional geology in the area of the site. Available maps included Map 2544, Bedrock Geology of Ontario: Southern Sheet (Ontario Geological Survey, 1991) and Map 2556, Quaternary Geology of Ontario: Southern Sheet (Barnett et. al., 1991).
- **Areas of Natural Significance and Species at Risk** – A search of the Ontario Ministry of Natural Resources' (MNR) Natural Heritage Information Centre (NHIC) database (available at http://www.ontario.ca/environment-and-energy/natural-heritage-information-centre http://www.nhic.mnr.gov.on.ca) was conducted to identify species at risk, rare species habitat, vegetation communities, natural areas, areas of natural and scientific interest (ANSIs) and provincially-significant wetlands (PSW) in the area of the site.
- **MOE Water Well Records** - A search of the MOE database of water well records was conducted for a 2 km radius surrounding the site to identify potential potable water use in the area and to evaluate regional hydrogeological/geological characteristics.
- **Company Records** – Copies of relevant company records, site plans, site sketches and/or historical photographs provided by Imperial were reviewed.

3.1 ENVIRONMENTAL REPORTS

Copies of reports documenting eleven (11) previous environmental investigations at the site were provided for review. A summary of these investigations is provided in Appendix B. Based on this review, potential or likely impacts to soil and/or groundwater and other APECs were identified in the following areas of the site:

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

- UST and pump island area – During various investigations completed between 2008 and 2014, soil, groundwater and soil vapour samples collected in these areas exceeded applicable standards. Free phase product was encountered in two (2) monitoring wells) and has not been observed in any of the monitoring wells since 2011.
  - In 2009, an equipment upgrade was completed at the site that involved removal of seven (7) USTs (3 x 22,700 L and 2 x 13,600 L for gasoline 1 x 13,600 L for diesel and 2,273 L suspected furnace oil tank), pump islands, fuel dispensers and associated piping. Approximately 2,170 tonnes of soil was disposed off-site. Approximately, 1,085 tonnes of imported fill was brought to the site. Four (4) new USTs (3 x 50,000 L for gasoline and 1 x 25,000 L for diesel), product piping and fuel dispensers were installed at the site.
  - A Phase I ESA completed in 2008 identified the following APECs:
    - Two (2) automotive service garages in operation between early 1960 to mid 1990s. The service station building located in the southwest portion of the site was in operation between early 1960s to the mid 1980s. The current Tim Horton's restaurant building operated as a service garage with four (4) service bays between 1983 and 1993;
    - One (1) box transformer; and,
    - Current and historical retail fuel storage and dispensing.
- South of southwest corner of site on Medhurst Drive – A Phase II ESA investigation completed in 2010 identified soil exceedances in the north and south road allowances of Medhurst Drive. During multiple groundwater sampling events completed between 2010 and 2012, groundwater samples collected from the north road allowance exceeded standards applicable at the time of the investigations.

3.2 GENERAL

3.2.1 Fire Insurance Plans

OPTA was contracted to obtain property underwriters' fire insurance plan maps. In their response, OPTA indicated no FIPs were available for the site and/or adjacent properties. Their response included a copy of a 1986 insurance risk inspection report. No items of potential environmental concern were noted. A copy of the response is included as Appendix C.

3.2.2 Chain of Title

Select Conveyancing Ltd. was retained to conduct a title search for the site and chain of title searches for adjacent properties. As the approximate development period of the property was unknown when the search was requested, the title search for the site was completed from present to Crown ownership or a minimum of 50 years history. The land register record and deed for the site; and the results of the chain of title searches for the site and adjacent sites are provided in Appendix D.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

The site consists of two (2) lots. Both lots are currently owned by Imperial Oil limited and have been leased by The TDL Group Ltd. since 1995. At least a portion of the site has been owned by Imperial Oil Limited since 1957. Portions of the site were transferred between Imperial Oil Limited, Corporation of the Township of Nepean and Merivale Developments Limited in 1957, 1961 and 1969. Both lots were transferred from Merivale Developments Limited to Imperial Oil Limited in 1980. The site was owned by a private individual with no leases prior to 1957.

No listings suggesting the potential to impact soil and/or groundwater were identified for adjacent properties. The title search identified ownership of adjacent properties by several development companies, investment groups and utility companies; however, activities at these sites were unknown.

3.2.3 Municipal Directories

OPTA was contracted to provide a summary of site occupancy based on municipal directories. OPTA provided listings between 1964 and 2011. A copy of the response is included as Appendix E.

The site was listed as Esso in 1974 and from 1984 to 2011. A private residence was listed at the site in 1979. There were no listings for the site prior to 1974.

No listings suggesting the potential to impact soil and/or groundwater were identified for surrounding properties.

3.3 Environmental Source Information

3.3.1 ERIS Database Information

A copy of the ERIS report, including a complete listing of the databases searched, is provided as Appendix F. The following sections summarize information in the ERIS report which may be pertinent to the environmental condition of the site.

3.3.1.1 Records Reported for the Site

The ERIS report provided the following information pertaining to the site.

Database	Details
List of TSSA Expired Facilities:	• Thirty-two (32) records for expired fuel tank and piping for 1070443 Ontario Inc. O/A Woodroffe Tiger Express.
Fuel Storage Tank:	• Three (3) listings for fiberglass double wall gasoline USTs (3 x 50,000 L) and one (1) listing for fiberglass double wall diesel UST (25,000 L) installed in 2009; active.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

Database	Details
Fuel Storage Tank - Historic:	• Two (2) listings for five (5) single wall gasoline USTs with capacity of 13,600 L and 22,700 L and one (1) single wall diesel UST with capacity of 22,700 L installed in 1981; active as of August 2007 and December 2008. • One (1) listing for five (5) single wall gasoline USTs with capacity of 13,600 L and 22,700 L and one (1) single wall diesel UST with capacity of 13,600 L installed in 1986.
Ontario Regulation 347 Waste Generators Summary:	• Imperial Oil; registered generator of light fuels, waste oils & lubricants and oil skimmings & sludges.
TSSA Historic Incidents:	• Discovery of a petroleum product reported December 12, 2008.
Private and Retail Fuel Storage Tanks:	• One (1) license for a retail fuel outlet registered to 1070427 Ontario Ltd. O/A Woodroffe expired September 30, 1995.
Retail Fuel Storage Tanks:	• Four (4) listings for Esso Gas Station/Esso Tiger Express for service stations-gasoline/oil & natural gas.
Ontario Spills:	• Leak of gasoline from underground tank reported December 12, 2008; environmental impact not anticipated.
	• Queensway Tank Lines (cargo tank truck), a spill of 4 L of gasoline to pavement at service station due to pipe/hose leak reported July 3, 1993; environmental impact not anticipated.
	• Imperial Oil Limited, a spill of 0.25 L of gasoline into groundwater wells reported August 23, 2011; cleaned, environmental impact not anticipated.
Certificate of Approval (CofA):	• One (1) CofA (industrial air; kitchen exhaust fan for Tim Hortons) issued to Imperial Oil Limited; cancelled September 30, 1993. • One (1) CofA (industrial air) issued to Imperial Oil Limited, February 16, 1994.

3.3.1.2 Records Reported for the Search Area

The ERIS report provided the following information pertaining to adjacent properties.

Database	Adjacent Property	Details
Ontario Regulation 347 Waste Generators Summary:	72A/G Brockington Cres. (north and/or east of site)	• Carling Realty Company Limited; registered generator of light fuels, paint/pigment/coating residues, aliphatic solvents and waste oils & lubricants.
TSSA Historic Incidents:	72A/G Brockington Cres. (north and/or east of site)	• Natural gas release at private dwelling incident dated October 24, 2008.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

The following relevant environmental records were identified in the ERIS report for other properties within 250 m of the site.

Database	Adjacent Property	Details
Ontario Regulation 347 Waste Generators Summary:	Unplottable listing	• One (1) listing for Imperial Oil Limited for registered waste generator of oil skimmings & sludges; location could not be determined.
Abandoned Aggregate Inventory:	Unplottable listing	• One (1) listing for quarry was identified; location could not be determined.
Landfill Inventory Management Ontario:	Unplottable listing	• One (1) record for closed Rideau Landfill was identified; location could not be determined.
National Analysis of Trends in Emergencies System (NATES):	Unplottable listing	• One (1) listing for spill of gasoline was identified. The source of the spill was indicated as service station. Location could not be determined.
National Environmental Emergencies System (NEES):	Unplottable listing	• Eight (8) listings for spills were identified for various businesses including Esso Petroleum/Imperial Oil dated between October 22, 1979 and April 19, 1989. Locations could not be determined.
National PCB Inventory:	Unplottable listing	• One (1) listing was identified; location could not be determined.
Retail Fuel Storage Tanks:	Unplottable listing	• One (1) listing was identified; location could not be determined.
Ontario Spills:	Unplottable listing	• Eighteen (18) records of spills of diesel fuel, jet fuel, hydraulic oil, gasoline and furnace oil were identified. Seventeen (17) of the records were for Esso Petroleum Canada/Esso Avitat; locations could not be determined.

Information from the remaining records did not identify any activities or occurrences that were likely to contribute to soil and/or groundwater impacts at the site due to their indicated distance from the site or the nature of the record.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

3.3.2 MOECC Freedom of Information (FOI) Request

A search of MOECC files was requested through the Freedom of Information and Protection of Privacy Act (FOIPPA) for the site. A copy of the response is provided in Appendix G.

The following records relating to the site were provided by the MOECC:

MOE FOIPPA Records	
HWIN Administration	• Waste generator number ON7721580 was registered to Imperial for 221 L, 221 L, 251L and 252 L waste classes.
Incident Report (dated June 26, 2013):	• Report of a diesel nozzle repeatedly spilled approximately 100 mL of fuel while being placed back into pump holder after each use. The issue had been ongoing for approximately six weeks. Considerable staining surrounding the diesel pump was noted.
Incident Report (dated August 23, 2011):	• Report of approximately 73 mm (0.25 L) of LNAPL was observed in one (1) monitoring well adjacent to the pump island during an annual monitoring event. Development of a CMP was in progress.
Incident Report (dated December 12, 2008):	• Imperial reported impacts from historical leak from an UST. Gasoline sheen was observed in one (1) monitoring well. A Phase II ESA and UST replacement were in progress.
MOECC Incident Report (dated December 27, 2014)	• Complaint filed of noise nuisance due to a generator associated with possible mobile treatment trailer. Consultant was notified and would send a representative to site to turn off generator for a couple of days. Noise issues after system restart would be mitigated through trouble shooting.
Occurrence Report (dated July 3, 1993):	• Report of approximately 2 to 4 L of gasoline spilled to pavement after dispenser hose slipped out of customer's hands. Spilled gasoline was contained and cleaned up.

The MOECC letter also indicated that there might be inactive records in the Records Centre, Mississauga. Additional search of these files was not requested.

3.3.3 Technical Standards and Safety Authority

A search of records of retail fuel facilities and registered storage tanks for the site was requested from the TSSA. Copies of the records on file for the site are provided in Appendix H.

TSSA Records	
Start date: At least 1997 End date: Active	• Operated as an active gasoline station licensed and registered to various operators since at least 1997.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

TSSA Records	
Infrastructure listed for the site	• Three (3) 50,000 L fiberglass double walled underground storage tanks (UST) for gasoline and one (1) 25,000 L fiberglass double walled UST for diesel installed in 2009.
Notes:	Two Ministry of Environment Incident Reports from the Spill Action Centre reported on: • August 23, 2011 summarized a phone call from an individual stating that during their annual monitoring for historical free product in groundwater monitoring wells, 73 mm (1/4 L) of free product (gasoline) was recovered. The product was purged from the well located adjacent to the pump island. Caller is in the process of completing a CMP and was notifying the local TSSA inspector of the incident. • June 26, 2013 summarizing a complaint from an individual that the diesel nozzle at Esso Station spills approximately 100 ml of fuel each time it is returned to the pump holder and has been ongoing for approximately 6 weeks. No additional follow up or details provided in follow up. A cover letter dated September 8, 2014 addressed to the TSSA from Parsons Canada Ltd. stating that the following reports were provided and are summarized below: <u>2014 Groundwater Monitoring and Sampling Data Package, 1545 Woodroffe Avenue, Ottawa, Ontario, dated September 4, 2014</u> • Ten (10) monitoring wells were monitored and compared to the MOE (2011) Table 3 generic site condition standards for non-potable groundwater conditions, medium and fine textured soil and all property uses. • Groundwater depth was between 3.50 mbgs to 5.28 mbgs and flow direction was southwest. • Seven (7) monitoring wells all located in the southwest portion of the site around the pump islands and tank farm had groundwater that exceeded the Table 3 standard for one or more of the following parameters: benzene, total xylenes, PHC F1 to F4. • Monitoring well headspace vapor ranged from 10 ppmv to >100 % LEL and a total of 20 L of groundwater with sheen was removed from BH12 by manual bailing and disposed of offsite at a licensed facility. <u>2014 Groundwater Monitoring and Sampling Data Package, Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario, dated September 4, 2014</u> • Six (6) monitoring wells were monitored and compared to the MOE (2011) Table 3 generic site condition standards for non-potable groundwater conditions, coarse textured soil and all property uses. • Groundwater depth was between 4.36 and 5.08 mbgs and flow direction was northwest. • Monitoring well (BH101) located on the road allowance for Medhurst Drive south of the site exceeded the Table 3 standard for total xylenes, PHC F1 and F2.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

TSSA Records	
	• Monitoring well headspace vapor ranged from 10 ppmv to 52% LEL. The cover letter also states that delineating monitoring wells along Woodroffe Avenue were paved over and no longer accessible and that these well are required to be monitored and sampled annually as per the Contaminant Management Plan (CMP). The consultant indicates that Imperial plans to redevelop the site in 2015 including source removal of impacted soil and continued monitoring of remaining accessible wells. Once redevelopment activities are completed the CMP is to be revised and reviewed and if required the monitoring wells on Woodroffe Avenue will be replaced.

TSSA records confirmed fuel-handling facilities existed at the site since at least 1997. The TSSA records are generally consistent with the current site plan provided by Imperial.

3.3.4 Aerial Photographs

Aerial photographs covering the site and surrounding area were available in the previous Phase I ESA (O'Connor, 2008) as referenced in Section 3.1. Air photo coverage was also obtained from the georeferencing tool on the City of Ottawa website http://maps.ottawa.ca/geoOttawa/ (1965 photograph). Copies of the aerial photographs reviewed are provided in Appendix I. In general, the available aerial photographs each cover a large area and provide only large-scale (low-resolution) information. Detailed interpretation of these photographs is precluded. The following table provides general observations with respect to buildings and structures, local property use and areas of potential environmental concern (APEC).

Year	Site	North	East	South	West
1953 - Detailed examination of the site/ surrounding areas was not possible due to the resolution of the photograph	The site appears to be vacant or possibly used for agricultural purposes.	Property appears to be vacant or possibly used for agricultural purposes.	Property appears to be vacant	Property appears to be vacant or possibly used for agricultural purposes.	Property appears to be vacant or possibly used for agricultural purposes.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

Year	Site	North	East	South	West
1965	The site appears to be used for commercial/ industrial purposes with a building and parking lot in the southwest portion of the site.	No significant changes observed.	No significant changes observed.	No significant changes observed.	Property includes disturbed soil and possible small structures are present.
1983	A possible canopy to the west of the existing building is visible. No other significant changes observed.	No significant changes observed.	Property appears to be used for residential purposes with buildings in the east portion.	No significant changes observed.	Property appears vacant.
1995	The site appears to be developed similar to the current configuration including the canopy and kiosk building, Tim Horton's building and car wash.	Property is developed for residential purposes.	Property is developed for residential purposes.	Property is vacant.	Property is vacant.
2013	The site is developed with a concrete pad for the UST nest in addition to infrastructure noted in 1995. No other significant changes observed.	No significant changes observed.	No significant changes observed.	No significant changes observed.	No significant changes observed.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

3.4 PHYSICAL SETTING

The physical setting of the site is summarized in the following table. Supporting information is provided in Appendix J.

Item	Description
Topography	The topography in the vicinity of the site gradually slopes to the northwest. The site is located at an elevation of approximately 85 m above mean sea level (NRCAN, 2015).
Water Bodies	The nearest permanent surface water body is Nepean Creek located approximately 680 m to the south (NRCAN, 2015).
Bedrock geology	The site is located in the Lower Ordovician in the Beekmantown Gp (Ontario Geological Survey, 1991). Bedrock in the area consists of dolostone and sandstone (Ontario Geological Survey, 1991).
Surficial geology	The site is characterized by glaciomarine and marine deposits: sand, gravelly sand and gravel; nearshore and beach deposits (Barnett et. al., 1991).
Environmental Protection Areas	The site is located within a wellhead protection zone.
Areas of Natural Significance	No areas of natural and scientific interest (ANSI), provincially significant wetlands (PSW) or provincial parks identified within 250 m of the site.

3.4.1 Species at Risk

A search of the NHIC database (MNR, 2015) was conducted to identify species of potential concern within 1 km of the site. A copy of the search results is provided in Appendix K and includes a summary of species at risk in the area of the site.

As the site consists primarily of paved areas in a commercial setting and does not include any undeveloped areas, the site would not be considered suitable habitat for the species at risk identified in the area.

3.4.2 Well Records

A search of water well records within 2 km of the site was requested from the Environmental Monitoring and Reporting Branch of the MOE. The well record search results are provided in Appendix L. Detailed interpretation of water well records in the area of the site is included in Section 5 (Potential Sensitive Receptors Survey).

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

3.5 COMPANY RECORDS

The most recent site plan provided by Imperial (2009) and showing current infrastructure is presented as Figure 2 and discussed in Section 4.1 (Site Reconnaissance). Former infrastructure is also shown in Figure 2 including the following:

- Six (6) USTs near the south property boundary;
- Concrete apron present at the same location as the current concrete apron; and,
- Three (3) of the fuel dispensers in their current locations.

No other relevant company records (e.g. historical site plans, surveys or photographs) were provided for the site (Appendix M).

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

4 SITE RECONNAISSANCE & INTERVIEWS

4.1 SITE RECONNAISSANCE

SNC-Lavalin personnel conducted a visual inspection of the site on June 25, 2015 to document current site conditions and to identify potential environmental concerns. Adjacent properties were inspected from publicly accessible areas to investigate potential environmental concerns associated with current adjacent property uses. The following table provides a summary of information obtained at this time. The current layout of the site is illustrated in Figure 2. Photographs obtained at the time of the site visit are included in Appendix N.

Table A: Site Visit Summary

Item	Description
Buildings	The site currently includes three (3) buildings: • Convenience store/kiosk: single-storey, slab-on-grade, metal clad and concrete walls, includes retail facility, Tim Horton's operations and utility/storage areas. • Drive-through car wash: single-storey, slab-on-grade, metal clad and concrete walls, underground drain and pits, includes car wash and utility/storage areas. • Tim Horton's restaurant: single-storey, slab-on-grade, metal clad and concrete walls (interior not accessed).
Other above ground structures	Current above ground infrastructure at the site includes: • Concrete slab with five (5) fuel dispensers covered by a canopy in south central portion of site; • Possible in-situ treatment system trailer located in west portion of site; • One (1) box transformer in the west portion of the site; and • One (1) metal clad shed in east portion of site (inaccessible during site visit).
Other below ground structures	No below ground infrastructure were observed.
Above ground storage tanks	No aboveground storage tanks were observed.
Underground storage tanks	The following underground storage tanks (USTs) are present: • Four (4) USTs (fiberglass) in the southwest portion of the site: two (2) regular gasoline, one (1) supreme gasoline, and one (1) diesel. Capacity could not be verified onsite.
Drains and sumps	Drains and sumps observed during the site visit include: • Underground drain and pits in the car wash (not accessible for inspection).
Lifts or hoists	No lifts or hoists were observed.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

Item	Description
Storage Containers	Storage containers of 205 L or greater observed during the site visit include: • Two (2) 205 L containers of presoak in the car wash pump room.
Processes and operations & Waste Streams	The site is currently operating as a retail facility and fueling station. Waste (non-hazardous and cardboard) is stored at the site in commercial dumpsters. Wastes are removed by Tomlinson at a frequency of every two (2) weeks. Imperial site staff could not provide details on the emptying/cleaning out process for pits and drains within car wash building.
Unidentified substances	There were no unidentified substances observed at the site during the site visit.
Services	The site is municipally or publicly serviced for water, sewer, natural gas and power.
Septic systems	There was no evidence of a septic system at the site.
Potable and non-potable water usage	The site is municipally-serviced for potable water.
Abandoned wells	No evidence of abandoned wells was noted.
Monitoring wells (or other)	The following well were observed: • Fifteen (15) monitoring wells observed throughout site (potentially more are present, manager unaware of how many total on site)
Designated Substances and Special Attention Items	There is the potential for the following designated substances to be present at the site: • Benzene would be present in the USTs, distribution lines, and pumps. • Silica would be expected in concrete materials at the site (e.g. concrete building materials and curbs) and could be found in drywall. • Lead-based paint could be present on painted surfaces, associated with piping, electrical panels or batteries, and leaded gasoline may have historically been stored at the site. • Polychlorinated biphenyls (PCBs) may be present in fluorescent light ballasts and transformers. • Mercury is expected in fluorescent light tubes and bulbs. • Ozone depleting substances (ODS) may be present in refrigeration and cooling equipment. • Due to the age of the building (circa 1960s), friable asbestos may be present in ceiling tiles, drywall, drywall joint compound, pipe wrap/insulation and/or plaster observed in convenience store building. • No mould was observed; however, humid conditions associated with onsite operations (car wash and retail facility) can present conditions favourable for mould growth.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

Item	Description
Air emissions	Possible air emissions associated with site operations include: • The exhaust of automobiles at the fueling facility and building HVAC systems; and, • The release of gasoline vapours during fueling and from vent stacks.
Ground cover	The site is predominantly asphalt paved with concrete in the area of the pump islands and UST nest. Landscaped areas with grass, bushes and trees are present around the periphery of the site.
Surficial staining	No surficial staining was observed in non-paved areas. Staining in paved areas was consistent with general operations at an active retail fueling facility, with stained areas throughout the site.
Stressed vegetation	Evidence of stressed and dead vegetation was noted on west section of property.
Topography & onsite drainage	• The site generally slopes to the west. • Drainage at the site is via overland flow to catch basins in paved areas and via infiltration in unpaved areas.
Roads, parking facilities, rights of ways & railway lines	Access to the site is via two (2) entrances, on Woodroffe Avenue and Medhurst Drive.
Waste Materials	Solid waste is stored onsite in commercial dumpsters. No evidence of dumping or waste piles was observed.
Pits or Lagoons	No exterior pits or lagoons were identified.
Water courses, ditches or standing water	No water courses, ditches or standing water were observed.
Bedrock outcrops	No bedrock outcrops were observed.
Odours	No odours were noted at the site at the time of the site visit.
Species at Risk (Observed during Site Visit)	A detailed inspection of site flora and fauna was not undertaken. No species at risk were observed during the site visit.
Adjacent Properties	North: Residential (two-storey townhouses). A railway line is located approximately 250 m north of the site.
	East: Residential (two-storey townhouses).
	South: Vacant (vegetated with grass and small trees) Southwest: Vacant (vegetated with grass and small trees; overhead transmission lines) One (1) box transformer and one (1) pole mounted transformer immediately southwest of site property line. Lands to the south and southwest form part of a high-tension power line corridor.
	West: Vacant (vegetated with grass and small trees) Evidence of decommissioned monitoring wells and/or boreholes was noted in the Woodroffe right-of-way adjacent to the site.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

4.2 INTERVIEWS

The site manager (Mir Wardek) was interviewed over the phone following the site inspection. Information obtained during these discussions has been summarized in the table above. The site manager was also able to provide the following additional details:

- The manager knew of no spills at the site. A spill management plan is in place.
- The manager knew of no investigations or surveys for the site that have identified contamination, designated substances or other hazardous materials.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

5 POTENTIAL SENSITIVE RECEPTOR SURVEY

A summary of potential sensitive receptor information gathered as part of the current Phase I ESA is provided in Appendix O.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

6 REVIEW AND EVALUATION OF INFORMATION

6.1 CURRENT AND PAST USES

Based on the records review and site reconnaissance, a summary of current and past uses of the site is provided below:

Year	Property Use	Description
Prior to 1957	Agricultural	The property was used for agricultural purposes based on the 1953 aerial photograph.
Circa 1957 to 1993	Service station and retail fuel facility	At least a portion of the site has been owned by Imperial Oil Limited since 1957. The site was operated as a service station from circa 1957 to 1993. Retail fuel operations began in the early 1980s. Former site infrastructure during this time included: - Six (6) USTs (2 x 13,600 and 3 x 22,700 L for gasoline and 1 x 13,600 L for diesel) in southwest portion of the site (installed in the 1980s and removed in 2009); - One (1) 2,273 furnace oil UST (removed in 2009); - One (1) garage building in southwest portion of the site; - Possible canopy located west of the building; and, - The current Tim Horton's restaurant building operated as a service garage with four (4) service bays between 1983 and 1993.
1993 to Present	Retail fuel facility	The site has operated as a retail fuel outlet in its current configuration since circa 2009. Infrastructure at the time of the site visit included: - Four (4) USTs (3x 50,000 L double wall fiberglass for gasoline and 1 x 25,000 L double wall fiberglass for diesel) - Concrete slab with five (5) fuel dispensers covered by a canopy; - Convenience store kiosk building; - Drive-through car wash; - Tim Horton's restaurant building (former garage); - Possible in-situ treatment system trailer; - One (1) metal clad shed; and, - One (1) box transformer. A Contaminant Management Plan (CMP) is in place to monitor known impacts to soil and groundwater identified during various assessments at the site. Site redevelopment including source removal of impacted soil is planned for 2015. Once redevelopment activities are completed the CMP in place for the site is to be revised and reviewed.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

6.2 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

6.2.1 Onsite APECs

Based on records review, observations made during the site reconnaissance and information gathered through interviews, onsite APECs were identified. APECs and associated potential contaminants of concern (PCOC) that could impact soil and/or groundwater at the site are summarized below:

Onsite APECs	Area	PCOCs	
		Soil	Groundwater
Current and historical retail fuel storage and dispensing (including tank nest, pump islands, spills known soil and groundwater impacts and possible remediation system)	Southwest portion of site	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH
Car wash	East portion of site	BTEX, PHC F1 to F4, 1,2 DBA, 1,2 DCA, MTBE, selected metals (arsenic, barium, chromium, copper, lead and zinc) and PAH	BTEX, PHC F1 to F4, 1,2 DBA, 1,2 DCA, MTBE, selected metals (arsenic, barium, chromium, copper, lead and zinc) and PAH
Former service bay (automotive repairs)	Northeast and southwest portions of site	BTEX, PHC F1 to F4, VOC, selected metals (arsenic, barium, chromium, copper, lead and zinc), PAH and PCB	BTEX, PHC F1 to F4, VOC, selected metals (arsenic, barium, chromium, copper, lead and zinc), PAH and PCB
Transformer box	West portion of site	PCB	PCB
Fill of Unknown Origin	Throughout site	BTEX, PHC F1 to F4, Metals and PAH	BTEX, PHC F1 to F4, Metals and PAH (subject to soil results)

BTEX = benzene, toluene, ethylbenzene, and xylenes
PHC F1 to F4 = petroleum hydrocarbon fractions in the F1 to F4 ranges
Pb = lead (a gasoline additive)
1,2 DBA = 1,2 dibromoethane (a lead scavenger)
1,2 DCA = 1,2 dichloroethane (a lead scavenger)
MTBE = methyl tertiary butyl ether (a gasoline additive)
PAH = polycyclic aromatic hydrocarbons
VOC = volatile organic compounds
PCB = polychlorinated biphenyls

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

6.2.2 Offsite APECs

The following APECs due to activities at offsite locations were identified:

Offsite APECs	Address	PCOCs	
		Soil	Groundwater
Known soil and groundwater impacts	Road allowance (adjacent to south)	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH	BTEX, PHC F1 to F4, Pb, 1,2 DBA, 1,2 DCA, MTBE, and 2 & 3 ring PAH
Transformer (box and pole mounted)	Road allowance (adjacent to southwest)	PCB	PCB
Registered generator of light fuels, paint, aliphatic solvents and waste oils	72A/G Brockington Cres. (north and/or east of site)	None – no records indicating improper storage, handling or disposal were found.	None – no records indicating improper storage, handling or disposal were found.

Other potential sources of contaminants were identified on properties for which no geographic location was identified (unplottable listing in the EcoLog ERIS report). These generally related to spills and many were identified for Imperial Oil/Esso Petroleum service stations. A quarry and closed landfill were also identified as unplottable listings. The records that likely relate to the site are captured under the PCOCs identified for the site. As the separation between other listings and the site could not be determined, related activities are not included as APECs for the subject site.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

7 CONCLUSIONS

Based on review and evaluation of the information discussed herein, there is evidence of potential contamination associated with current and/or historical uses of the site and/or surrounding properties.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

8 LIMITATIONS

8.1 LIMITATIONS AND EXCEPTIONS OF THE ASSESSMENT

This Phase I ESA has been prepared for the exclusive use of Imperial. The ESA was conducted in general accordance with the agreed upon scope of work and Canadian Standards Association (CSA) Z768-01 (R2012). A Phase I ESA does not constitute a Compliance Audit, a Designated Substances Survey or intrusive environmental investigation. No review of environmental regulatory compliance was carried out as part of this assessment. No soil, water, building materials or other samples were collected or analyzed as part of this work program and no assessment of vapour intrusion or indoor air quality was conducted. Inspections of surrounding properties were limited to visual observations from the site and from publicly-accessible vantage points.

Specific exceptions to the CSA guidelines were as follows:

- The assessor's qualifications are not noted herein; however, they are available upon request.
- As the scope of work did not include work at heights, building roofs were not accessed during the site visit.
- The underground drain and pits in the car wash were not accessible during the site inspection.
- The shed and trailer onsite were not accessible for inspection.
- Inspection of the Tim Horton's Restaurant building included only exterior observations and no interviews were conducted with Tim Horton's staff or staff knowledgeable of activities specific to the Tim Horton's building.

8.2 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by the Environment & Water business unit of SNC-Lavalin Inc. (SNC-Lavalin), for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial"). Any use, reliance on or decision made by any other person other than Imperial based on this report is the sole responsibility of such other person. Imperial and SNC-Lavalin make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

The investigation undertaken by SNC-Lavalin with respect to this report and any conclusions or recommendations made in this report reflect SNC-Lavalin's judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to the site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of SNC-Lavalin. Nothing in this report is intended to constitute or provide a legal opinion.

SNC-LAVALIN INC.

Wing-Shun Wu, M.Env.Sc.
Report Author
Environment & Water

Melanie Siewert, P.Geo. (Limited)
Senior Reviewer
Environment & Water

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

9 REFERENCES

Barnett, P.J., Cowan, W.R. and Henry, A.P. 1991. Quaternary Geology of Ontario, Southern Sheet, Ontario Geological Survey Map 2556, scale 1:1,000,000. 1991.

Canadian Standards Association (CSA), 2012. CSA Standard Z768-01, Phase I Environmental Site Assessment. November 2001. Last updated April 2003, Reaffirmed 2012.

Ontario Ministry of Natural Resources (MNR), 2014. Natural Heritage Information Centre. http://www.ontario.ca/environment-and-energy/natural-heritage-information-centre Database checked by SNC-Lavalin May 2015.

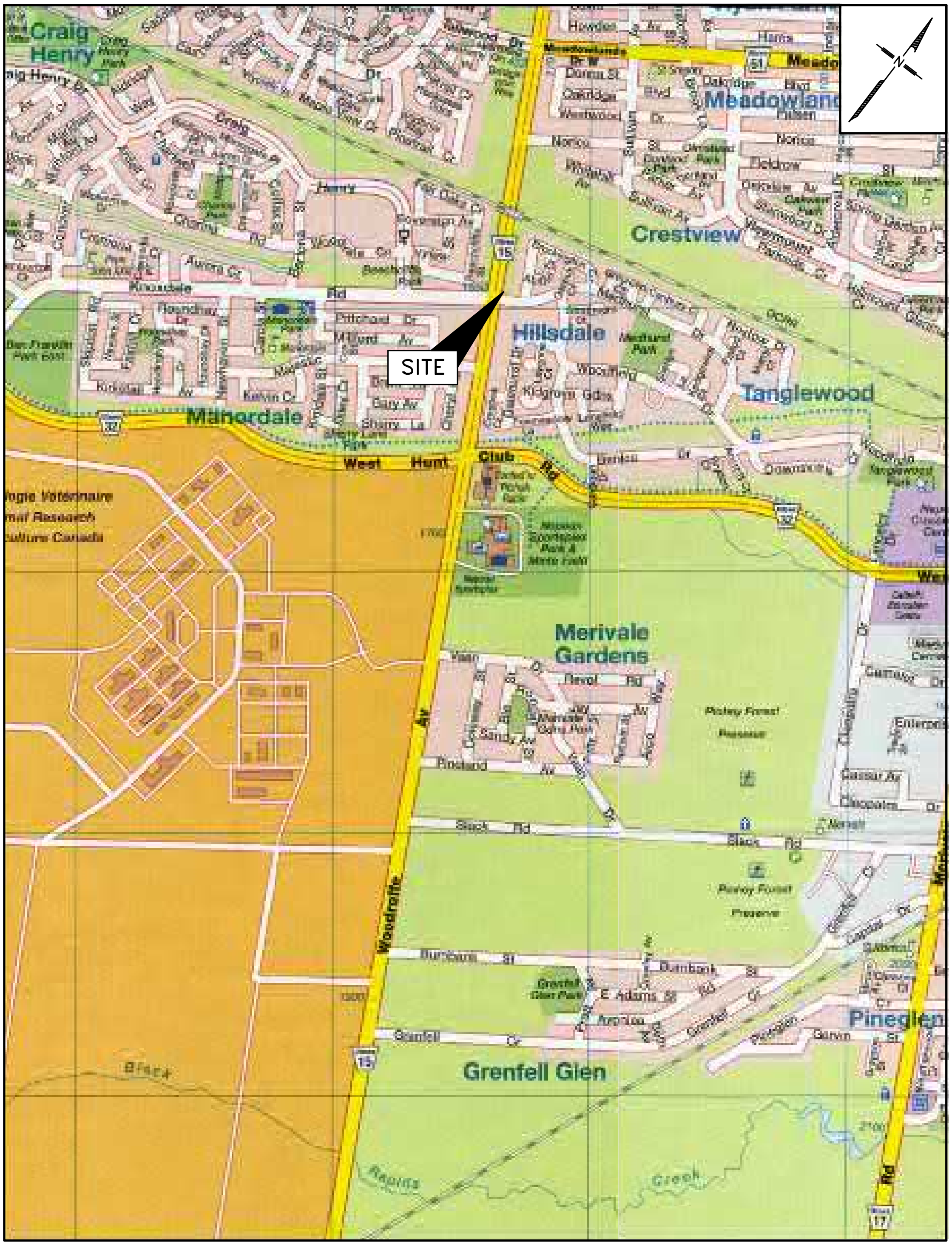
Natural Resources Canada, 2015. The Atlas of Canada – Toporama. Available online at: http://atlas.nrcan.gc.ca/site/english/toporama/index.html

Ontario Geological Survey, 1991. "Bedrock Geology of Ontario, Southern Sheet; Ontario Geological Survey, Map 2544", Scale 1:1,000,000.

Ontario Ministry of the Environment (MOE), 2011. Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

© SNC-Lavalin Inc. 2015. All rights reserved Confidential

FIGURES



SOURCE(S):
1. SCHWERDT GRAPHIC ARTS LTD., (MapArt), 2007 EDITION

SCALE 1:25,000

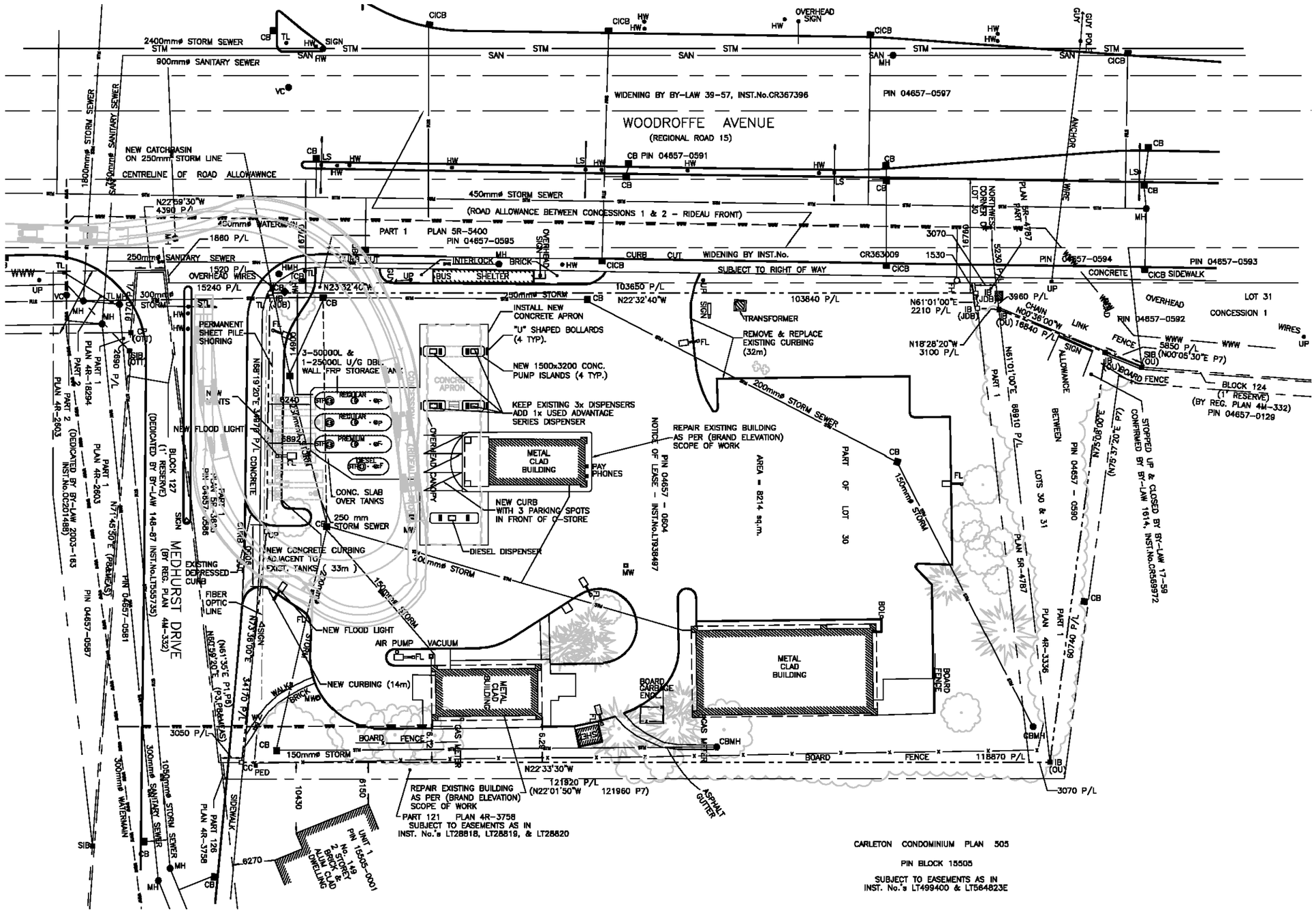
0 0.5 1.0km

SNC·LAVALIN

Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE, NEPEAN, ON		Title: SITE LOCATION PLAN	
Project No: 628494	Filename: 043SL-628494-2	Date: JUNE 2015	Dwg No: FIGURE 1
Drawn: AG	Verified: PS	Project Manager: MS	

PAGE FORMAT: 8.5x11

FILENAME: P:\IOL\2015 Phase I Bundle\628494\4.0 Execution\4.7 Working Versions\043 (1545 WOODROFFED AVE, NEPEAN)\CAD_GIS\043SL-628494-2.dwg



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 IN OTHER THAN ITS ORIGINAL SIZE AND COLOURS
3. 'm' : METRES

SOURCE(S):
1. IMPERIAL OIL, SITE PLAN, TANKS, DISPENSERS REPLACEMENT, REF#88001626-02A, JULY 26, 2006, REV#11 DECEMBER 2, 2009

SNC·LAVALIN

Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE NEPEAN, ON		Title: SITE PLAN WITH CURRENT INFRASTRUCTURE	
Project No: 628494	Filename: 043CP-628494-1.DWG	Date: JUNE 2015	Dwg No: FIGURE 2
Drawn: EM	Verified: MS	Project Manager: MS	

PAGE FORMAT: 11x17

FILENAME: P:\Imperial Oil\2015 Phase 1 ESA Bundle\628494-ON3 Bundle\4.0 Execution\4.7 Working Versions\043 (1545 WOODROFFED AVE, NEPEAN)\CAD_043CP-628494-1.dwg

FAIR OAK CRESCENT

SOVEREIGN AVENUE

BEECHCLIFFE STREET

IVYLEA STREET

[40 BEECHCLIFFE STREET]

[VACANT LOT]

WOODROFFE AVENUE

[66 A BROCKINGTON CRESCENT]
RESIDENTIAL

SITE
[1545 WOODROFFE AVENUE]
COMMERCIAL/INDUSTRIAL (RETAIL FUEL OUTLET, RESTAURANT, 1993-PRESENT) [SERVICE STATION AND RETAIL FUEL OUTLET] INDUSTRIAL (1957-1995)
FORMERLY COMMERCIAL/INDUSTRIAL (1979)
FORMERLY RESIDENTIAL (1979)
FORMERLY AGRICULTURAL

BROCKINGTON CRESCENT

ABITIBI CRESCENT

MEDHURST DRIVE

WOODFIELD DRIVE

[VACANT LOT]

DALEHURST DRIVE

LAVONNE COURT

KNOXDALE ROAD

[VACANT LOT]

N

SCALE 1:2,000

0 40 80m

LEGEND

SITE PROPERTY LINE

PROPERTY LINE

NOTE(S):
1. SCALE AND SITE INFRASTRUCTURE LOCATIONS ARE APPROXIMATE
2. INFORMATION ON THIS FIGURE MAY BE LOST IF IT IS PRINTED, PHOTOCOPIED OR FAXED IN OTHER THAN ITS ORIGINAL SIZE AND COLOURS
3. WHERE CHANGE IN PROPERTY USE WAS NOT EVIDENT (BASED ON RECORDS REVIEWED), NO ADDITIONAL DETAILS PROVIDED
4. 'm' : METRES

SOURCE(S):
1. CITY OF OTTAWA, ONLINE MAP. JUNE 2015

SNC·LAVALIN

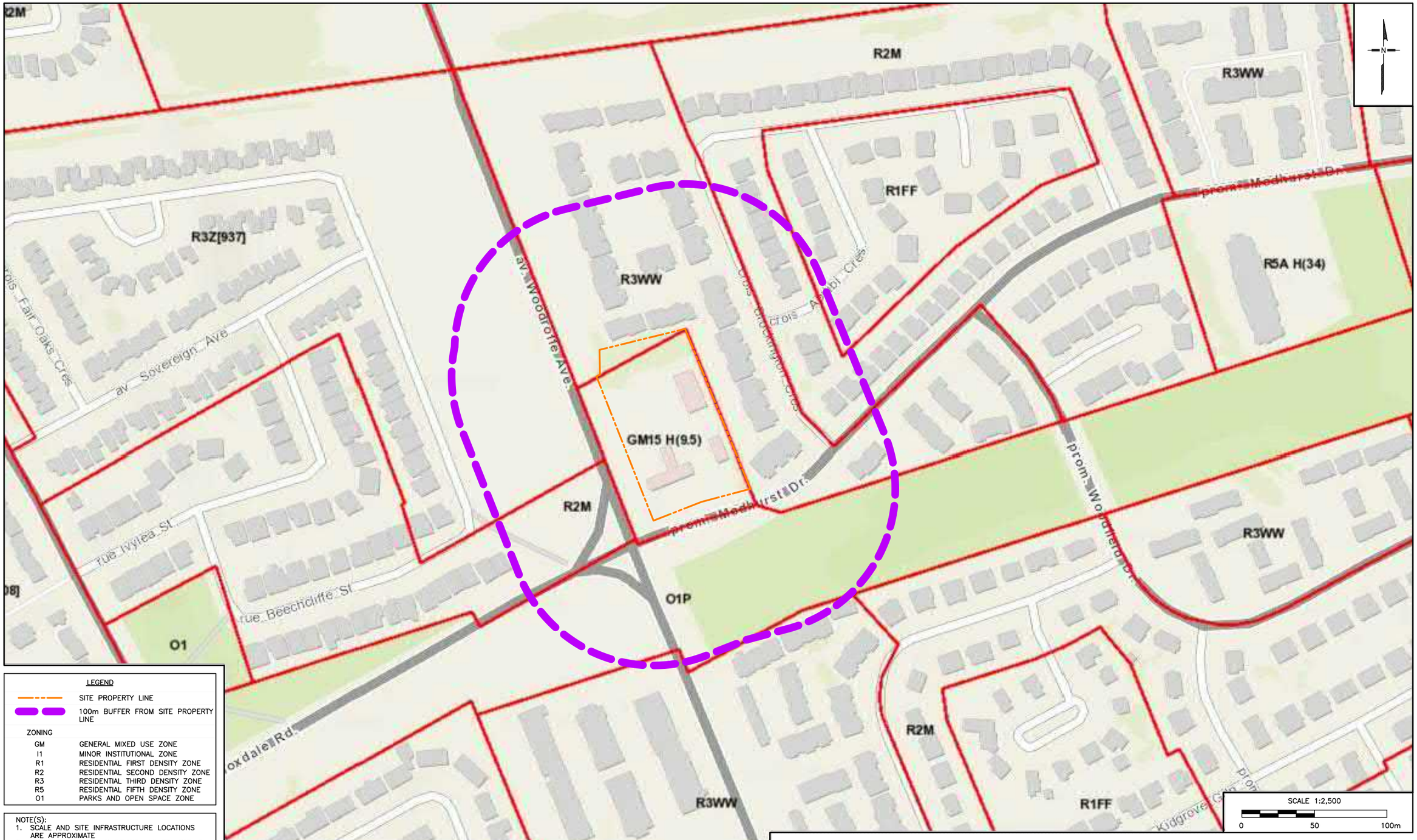
Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE, NEPEAN, ON		Title: CURRENT AND HISTORICAL PROPERTY USE	
Project No: 628494	Filename: 043PU-628494-1	Date: JUNE 2015	Dwg No: FIGURE 3
Drawn: AG	Verified: FE	Project Manager: MS	

PAGE FORMAT: 11x17

FILENAME: P:\OL\2015 Phase I Bundle\628494\4.0 Execution\4.7 Working Versions\043 (1545 WOODROFFE AVE, NEPEAN)\CAD_GIS\043PU_628494-1.dwg

APPENDIX A

Zoning Information



LEGEND

	SITE PROPERTY LINE
	100m BUFFER FROM SITE PROPERTY LINE

ZONING

GM	GENERAL MIXED USE ZONE
I1	MINOR INSTITUTIONAL ZONE
R1	RESIDENTIAL FIRST DENSITY ZONE
R2	RESIDENTIAL SECOND DENSITY ZONE
R3	RESIDENTIAL THIRD DENSITY ZONE
R5	RESIDENTIAL FIFTH DENSITY ZONE
O1	PARKS AND OPEN SPACE ZONE

NOTE(S):
1. SCALE AND SITE INFRASTRUCTURE LOCATIONS ARE APPROXIMATE
2. INFORMATION ON THIS FIGURE MAY BE LOST IF IT IS PRINTED, PHOTOCOPIED OR FAXED IN OTHER THAN ITS ORIGINAL SIZE AND COLOURS
3. 'm' : METRES

SOURCE(S):
1. CITY OF OTTAWA, ONLINE MAP. JUNE 2015

SNC·LAVALIN

Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE, NEPEAN, ON		Title: ZONING OF SITE AND SURROUNDING PROPERTIES	
Project No: 628494	Filename: 043ZN-628494-1	Date: JUNE 2015	Dwg No: APPENDIX A
Drawn: AG	Verified: RF	Project Manager: MS	

PAGE FORMAT: 11x17

FILENAME: P:\OL\2015 Phase 1 Bundle\628494\4.0 Execution\4.7 Working Versions\043 (1545 WOODROFFE AVE, NEPEAN)\CAD_GIS\043ZN_628494-1.dwg

APPENDIX B

Previous Investigations

SUMMARY OF HISTORICAL SITE INVESTIGATIONS
1545 Woodroffe Avenue, Nepean, ON

Report Title	Prepared by:	Date	Scope	Applied Regulatory Criteria	Areas of Potential Environmental Concern (APEC) Identified
Supplementary Phase Two Environmental Site Assessment Area to be Expropriated, 1545 Woodroffe Avenue, Ottawa, Ontario	Parsons Canada Ltd.	April 9, 2015	Phase II ESA (Soil and groundwater investigation): Drilling of four (4) boreholes, installation of three (3) monitoring wells, soil sampling, groundwater monitoring and sampling in newly installed monitoring wells)	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil (amended 2011)	All analysed soil and groundwater samples met applicable standards. LNAPL was not encountered in any of the monitoring wells.
Contaminant Management Plan, Operating Imperial Oil Service Station - 1545 Woodroffe Avenue, Ottawa, Ontario, TSSA Service Request #653272	TSSA	May 1, 2014	Letter documenting receipt of reports and findings during the 2013 groundwater monitoring and sampling program at the site and adjacent boulevard.	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil (amended 2011)	Samples collected from monitoring wells BH5, BH10, BH11, BH12, BH-13 and BH101 (located south portion of site around UST and pump island areas and south of southwest portion of site) exceeded the applicable standards. LNAPL was not encountered in any of the monitoring wells.
Soil Vapour Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario	Parsons Canada Ltd.	April 2, 2014	Installation of two (2) soil vapour monitoring wells west of the convenience store kiosk, soil and soil gas sampling.	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil (amended 2011) and Tier 2 MOE Modified Generic Risk Assessment for human health based indoor air criteria	Soil results met the applicable standards. Soil gas results exceed the applicable standards for benzene.
Subsurface Investigation, Boulevard adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario	Parsons Canada Ltd.	October 11, 2012	Soil and groundwater investigation: Installation of two (2) monitoring wells, soil sampling, groundwater monitoring and sampling in all accessible monitoring wells)	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil and coarse textured soil (amended 2011)	With the exception of groundwater sample collected from monitoring well BH101 (located south of southwest portion of site), analysed soil and groundwater samples met applicable standards. LNAPL was not encountered in any of the monitoring wells.

Report Title	Prepared by:	Date	Scope	Applied Regulatory Criteria	Areas of Potential Environmental Concern (APEC) Identified
Supplementary Phase Two Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario	Parsons Canada Ltd.	October 11, 2012	Phase II ESA (Soil and groundwater investigation): Installation of one (1) monitoring well, soil sampling, groundwater monitoring and sampling in all accessible wells)	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil (amended 2011)	All submitted soil samples met applicable standards. Groundwater samples collected from monitoring wells BH5, BH6, BH8, BH-10, BH12 and BH-13 (located in central portion of site) exceeded the applicable standards.
Correspondences between TSSA, Parsons and Imperial	TSSA, Parsons Canada Ltd. and Imperial	February 17 to March 2012	Transmittal letters of reports and acknowledgement of receipt of reports. In addition, TSSA letter listed findings of a Phase II ESA completed in 2010. The investigation included installing four (4) monitoring wells in the boulevard of Medhurst Drive, soil sampling, groundwater monitoring and sampling.	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil (amended 2011)	With the exception of soil samples collected from BH101 and BH103 (located south of southwest corner of site), analysed soil samples met applicable standards. With the exception of groundwater sample collected from BH101, analysed groundwater samples met applicable standards.
Supplementary Phase II Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario	O'Connor Associates Environmental Inc.	January 17, 2012	Phase II ESA (Soil and groundwater investigation): Installation of three (3) monitoring wells, re-drill and install one (1) monitoring well that was historically dry, soil sampling, groundwater monitoring and sampling in all accessible wells)	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil (amended 2011)	With the exception of PHC F1 from borehole BH-13 (located central west portion of site), soil results met applicable standards. Groundwater samples collected from monitoring wells BH-5, BH-6, BH-8, BH-11, BH-13 (located in central portion of site) exceeded the applicable standards. LNAPL was encountered in monitoring well BH12 (located in central portion of site).
Groundwater Monitoring and Sampling, 1545 Woodroffe Avenue, Ottawa, Ontario	O'Connor Associates Environmental Inc.	September 15, 2011	Groundwater monitoring and sampling in all accessible monitoring wells.	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil (amended 2011)	Groundwater samples collected from monitoring wells BH-5, BH-6 and BH-11 exceeded applicable standards. LNAPL was encountered in monitoring well BH12 (located in south portion of site between canopy and building).

Report Title	Prepared by:	Date	Scope	Applied Regulatory Criteria	Areas of Potential Environmental Concern (APEC) Identified
2010 Groundwater Monitoring and Sampling Report, 1545 Woodroffe Avenue, Ottawa, Ontario	O'Connor Associates Environmental Inc.	March 22, 2011	Groundwater monitoring and sampling in all accessible monitoring wells.	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil	All submitted samples met applicable standards at the time; however, standards, sampling procedures and analytical methodologies have changed since this investigation was conducted. No LNAPL was encountered.
Supplementary Phase II Environmental Site Assessment, 1545 Woodroffe Avenue, Ottawa, Ontario	O'Connor Associates Environmental Inc.	June 25, 2010	Phase II ESA (Soil and groundwater investigation): Installation of five (5) monitoring wells, soil sampling, groundwater monitoring and sampling in all accessible wells)	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil	All submitted soil and groundwater samples met applicable standards at the time; however, standards, sampling procedures and analytical methodologies have changed since this investigation was conducted. No LNAPL was encountered.
Fuel Distribution System Upgrate & Remedial Excavation, 1545 Woodroffe Avenue (At Medhurst Drive), Ottawa, Ontario	O'Connor Associates Environmental Inc.	October 13, 2009	Conducted well decommissioning, document removal of existing fueling equpiment (USTs, pump islands, fuel dispensers and associated piping), complete two (2) test pits and submit verification samples from excavations and soil piles	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil	Seven (7) USTs were removed (3 x 22,700 L and 2 x 13,600 L for gasoline 1 x 13,600 L for diesel and 2,273 L suspected furnace oil tank). Approximately 2,170 tonnes of soil was disposed of off-site. Approximately, 1,085 tonnes of imported fill was brought to the site. Four (4) new USTs (3 x 50,000 L for gasoline and 1 x 25,000 L for diesel), product piping and fuel dispensers were installed at the site. Results of verification sampling from tests pits, final floor and walls of excavations, re-used excavated material and imported fill met applicable standards at the time. However, standards, sampling procedures and analytical methodologies have changed since this investigation was conducted.
Phase II Environmental Site Assessment, 1545 Woodroffe Avenue (At Medhurst Drive), Ottawa, Ontario	O'Connor Associates Environmental Inc.	October 13, 2009	Phase II ESA (Soil and groundwater investigation): Installation of seven (7) monitoring wells, soil/groundwater sampling and groundwater monitoring) in November 2008 (pre-redevelopment)	Regulation 153/04 Table 3 standards for commercial/industrial property use, medium and fine textured soil	With the exception of soil samples collected from boreholes BH1 and BH3 (located in southwest portion of site), all soil samples met applicable standards at the time. Sheen was observed on water from monitoring well BH6 (located in south central portion of site). All groundwater samples met applicable standards at the time. Note that standards, sampling procedures and analytical methodologies have changed since this investigation was conducted.

Report Title	Prepared by:	Date	Scope	Applied Regulatory Criteria	Areas of Potential Environmental Concern (APEC) Identified
Phase I Environmental Site Assessment, Esso Service Station, 1545 Woodroffe Avenue, Nepean, Ontario	O'Connor Associates Environmental Inc.	December 19, 2008	Phase I ESA (Identified potential sources of environmental impacts to the site resulting from current and historical activities on site and on surrounding properties)	None	Onsite APECs identified includes: - Current and historical retail fuel storage and dispensing - Two (2) automotive service garages operated from early 1960s to mid 1990s - Electrical transformer No APECs were identified from surrounding properties.

APPENDIX C

RMS/HEIRS™ Report (Fire Insurance Plans)

opta
INFORMATION INTELLIGENCE

enviroscan

An SCM Company

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:

Anthony Remonde

Site Address:

1545 Woodroffe Avenue Nepean ON Canada

Project No:

Requested by:

Fabienne Etienne
SNC Lavalin

Opta Order ID:

21063

Date Completed:

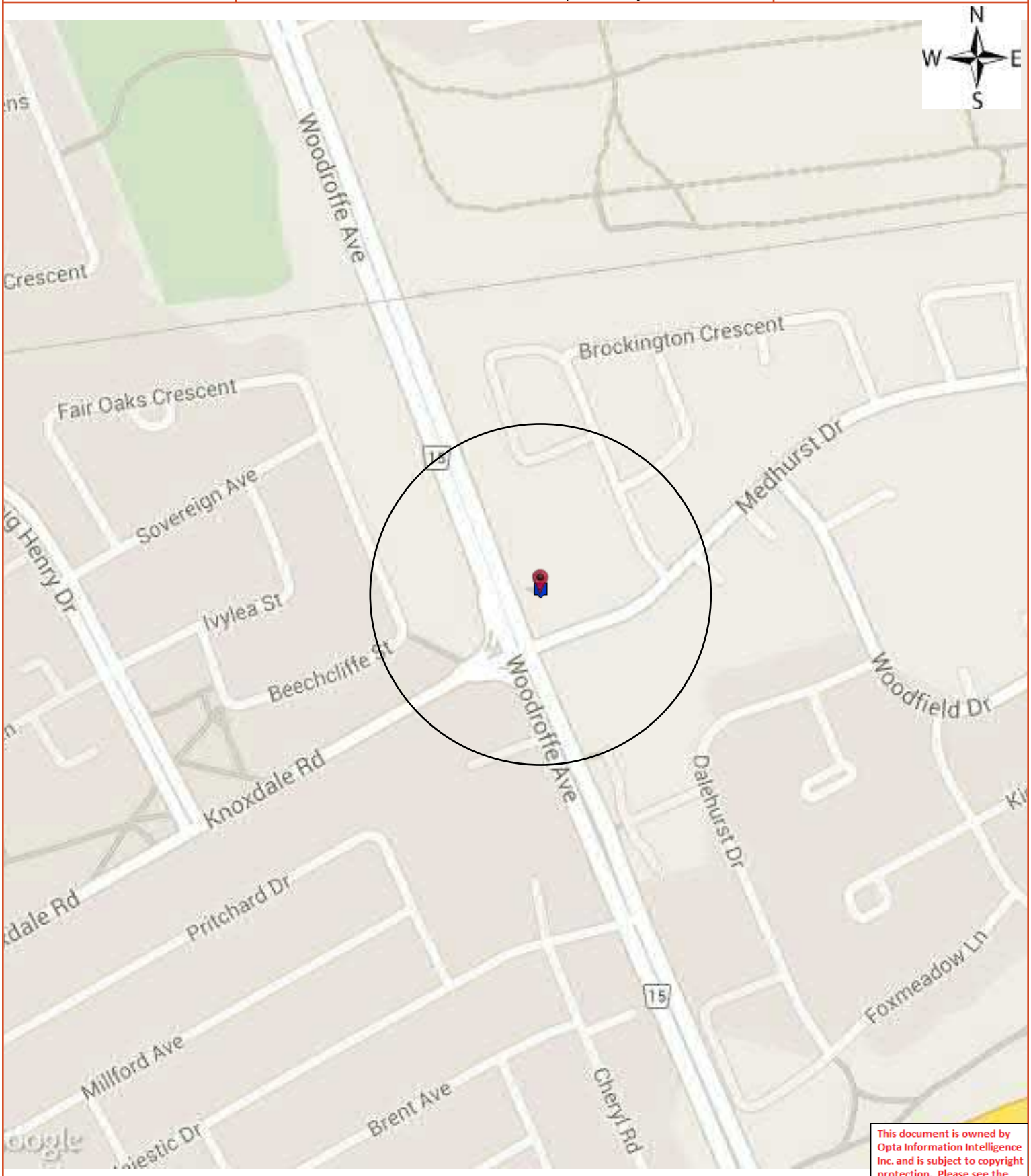
5/6/2015 3:33:22 PM

ENVIROSCAN Report

Search Area: 1545 Woodroffe Avenue Nepean ON Canada

Requested by:
Fabienne Etienne
Date Completed: May 6, 2015 15:33:22

enviroscan
OPTA INFORMATION INTELLIGENCE



This document is owned by Opta Information Intelligence Inc. and is subject to copyright protection. Please see the full Terms and Conditions at the front of this document.

Opta Historical Environmental Services Enviroscan™ Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

ENVIROSCAN Report

Report Index

Requested by:
Fabienne Etienne
Date Completed: May 6, 2015 15:33:22

OPTA INFORMATION INTELLIGENCE

Page	Report Title
5	(1986) Multirisk Report - 1986 UniPetro Resources 1545 Woodroffe Avenue Nepean ON a (distance = 0 metres*)

This document is owned by Opta Information Intelligence Inc. and is subject to copyright protection. Please see the full Terms and Conditions at the front of this document.

Multirisk Report - 1986 UniPetro Resources 1545 Woodroffe Avenue Nepean ON a

This document is owned by Opta Information Intelligence Inc. and is subject to copyright protection. Please see the full Terms and Conditions at the front of this document.

This document is owned by Opta Information Intelligence Inc. and is subject to copyright protection. Please see the purchase order relating to the release of this document for complete terms and conditions.

MultiPak
INSPECTION SERVICES

ALL RISK SUPPLEMENT CONFIDENTIAL

Insured: Unipetro Resources

Address: 1545 Woodroffe Avenue
Nepean, Ontario

IAO Office: Ottawa

Representative: F. K. Hunt

Date: 25 August 1986

Explain all circled ◯ answers

1. COLLAPSE:

Grounds Are:
- ☒ Natural
- ◯ Filled Land
- ◯ Undetermined

Area Subject to:
- ◯ Erosion
- ◯ Landslide
- ◯ Underground Hazards
- ◯ Heavy Snow Belt Area
- ◯ _____
- ☒ None of the above

Evidence of Sagging:
- ◯ Walls
- ◯ Floors
- ◯ Roof
- ◯ Structural Supports
- ◯ Cornice/Awning
- ◯ Porch
- ◯ Inadequate Drainage
- ☒ None of the above

Roof & Floors adequately supported & not overloaded ☒ Yes ◯ No

Stock Fixtures adequately supported ☒ Yes ◯ No

2. WATER DAMAGE:

Type of Plumbing System:
- ☒ Copper
- ☐ Galvanized
- ☐ Plastic
- ◯ _____

Exposed To:
- ◯ Freezing
- ◯ Mechanical Damage
- ☒ Neither

Evidence Of:
- ◯ Leakage
- ◯ Corrosion
- ◯ Substandard Support
- ◯ Inside And/Or Roof Storage Tank(s) or Process Equipment
- ☒ None of the above

Evidence of Water Damage To:
- ◯ Floor(s)
- ◯ Ceiling(s)
- ◯ Interior Wall(s)
- ◯ Exterior Wall(s)
- ☒ None of the above

Stock Susceptibility Is:
- ☐ Slight
- ☒ Moderate
- ◯ Severe

Stock Stored:
- ☐ In Basement
- ☐ On _____ Floor(s)
- ☒ Skid And/Or Shelf Storage
- ☐ None

3. FLOOD:

Nearest Body of Water:	Distance
☒ Pond/Lake	4 Km.
☐ Stream/Creek	
☐ River/Canal	
☐ Man-made Impondment	
☐ Ocean Bay or Harbour	
☐ _____	

Area Subject to:
- ◯ Surface Accumulation
- ◯ Flooding
- ◯ Sewage Back-up
- ◯ Recent Development

- ◯ Evidence of Inadequate Drainage
- ◯ Special Flood Protection Provided
- ◯ History of Floods at Location
- ☒ None of the above apply

4. EARTHQUAKE:

Earthquake Zone 2

EQ Construction Class (circle) A B C D (E) F

Natural Gas Connections ☐ No ☒ Yes

Exposed by Adjacent Tanks Antennas, Towers etc. ☒ No ◯ Yes

Unusual Features ☒ No ◯ Yes

Any Earthquake History ☒ No ◯ Yes

5. THEFT:

Machinery or Stock attractive ☒ No ◯ Yes

Alarms: ◯ Perimeter ◯ Area ☐ None
☐ Listed Central Station ◯ Other

Alarm Company: -

Locks: All Doors have dead bolts ◯ No ☒ Yes

Stock Stored in open ☒ No ◯ Yes

Yards Fenced & Well Lit ☒ No ☐ Yes

6. LOSS HISTORY: ◯ Yes ☒ No

COMMENTS

4. Standard gas connections

5. Yards are lit but not fenced due to nature of the business.

RECOMMENDATIONS (Point Form)

None.

MultiPak
INSPECTION SERVICES

CRIME SUPPLEMENT
(Short Form)
CONFIDENTIAL

Insured: Unipetro Resources
IAO Office: Ottawa
Address: 1545 Woodroofe Avenue
Nepean, Ontario
Representative: F. K. Hunt
Date: 25 August 1986

Explain all circled ○ answers

1. LOCATION:

Area: ☒ Residential; ☐ Commercial; ☐ Industrial; ☐ Rural; ○ Isolated
Police Patrol: ☒ City/Town; ☐ Prov./RCMP; ○ Private; ○ None
Area Crime History: ☒ Good; ○ Other

2. TYPE OF BUSINESS:

Describe:
Operates: 24 hours per day AM/PM to AM/PM 364 days per year days/Wk.
Stock ○ Attractive; ○ Easily Resold; ○ Cheques Cashed
Average Stock Value 5000
Average Cash on Hand 200-500.
Stock stored outside ○ Yes ☒ No
Yards fenced ☐ Yes ☒ No
Average Value of Stock outside
Yards lit ☒ Yes ○ No

3. HOLD UP:

Deposits made at Irregular Times by Principal or Bonded Individual ☒ Yes ○ No Normal Frequency daily.
Conveyance by ☐ Foot ☐ Public Trans. ☒ Private Vehicle ○ Other
Individual ☐ Armed ☒ Accompanied ○ Other Distance to Bank 1.6 Km.

4. OPENINGS:

Dead Locks on Doors ☒ Yes ○ No
Accessible Windows ☒ Yes ☐ No
Roof Openings ○ Yes ☒ No
Solid Masonry Walls & Ceilings to Neighbours ☐ Yes ○ No ☒ N/A

5. ALARMS: ☐ Yes ☒ No

Complete Alarm System ☐ Yes ○ No ULC ☐ Yes ○ No ULC Central Station ☐ Yes ○ No

6. WATCHMAN: ☐ Yes ☒ No

Rounds Hourly when not open ☐ Yes ○ Other ☐ None

7. SAFE: ☒ Yes ☐ No

Class – Anchored ☒ Yes ○ No Located IN SALES COUNTER.

8. LOSS HISTORY: ○ Yes ☒ No

COMMENTS

4 Aboute 60% of the wall area is glass

8 A hold up accured but a staff on duty informed bandit he left empty handed.

RECOMMENDATIONS (Point Form)

None.

APPENDIX D

Land Title Records

ENVIRONMENTAL SEARCH

Select Conveyancing Ltd.

1545 Woodroffe Avenue, Ottawa

Pin 04657-0590: Part of Road Allowance Between Lots 30 & 31, Concession 1 Rideau Front, Part 1 on 4R-3336; Nepean
Pin 04657-0604: Consolidation of Various Properties Part of Lot 30, Concession 1, Rideau Front as in CR362577 & Part 1 on Plan 5R-4787, except Part 1, Plan 5R-5400 & CR363009; Nepean

Instrument #	Type	Registration Date	Vendor	Purchaser	Remarks
CR362577	Transfer	August 19, 1957	Clifford Nesbitt	Imperial Oil Limited	Part
CR362578	Transfer	August 19, 1957	Imperial Oil Limited	Corporation of the Township of Nepean	Part
CR418084	Transfer	January 23, 1961	The Corporation of the Township of Nepean	Merivale Developments Limited	Part Road Allowance
CR569397	Transfer	December 19, 1969	The Corporation of the Township of Nepean	Merivale Developments Limited	Part
LT238833	Transfer	July 24, 1980	Merivale Developments Limited	Imperial Oil Limited	Part Road Allowance
NS91901	Transfer	July 24, 1980	Merivale Developments Limited	Imperial Oil Limited	Part
LT938497	Notice of Lease	June 23, 1995	Imperial Oil Limited	The TDL Group Ltd.	All of Lands Term of 20 years from March 1, 1995 to February 28, 2015 Option to extend for two terms of 5 years each

Additional Remarks: 1) Together with a Right over the Road Widening in CR363009.

1545 Woodroffe Avenue

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #4

04657-0590 (LT)

PREPARED FOR CHERYL FRAGISKOS
ON 2015/06/19 AT 12:56:14

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PCL 30-2, SEC NEPEAN-1 RIDEAU FRONT ; PT ROAD ALLOWANCE BTN LTS 30 & 31, CON 1 RIDEAU FRONT , PART 1 , 4R3336 ; NEPEAN

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
ABSOLUTE

RECENTLY:
FIRST CONVERSION FROM BOOK PA-9

PIN CREATION DATE:
1994/08/22

OWNERS' NAMES
IMPERIAL OIL LIMITED

CAPACITY SHARE
BENO

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1994/08/22 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1994/08/22						
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 1994/08/19 **						
4R3336	1980/01/14	PLAN REFERENCE				C
LT238833	1980/07/24	TRANSFER	$5,000	Menvale Developments Limited	IMPERIAL OIL LIMITED	C
LT251582	1981/02/12	AGREEMENT Site Plan Ag't			THE CORPORATION OF THE CITY OF NEPEAN	C
LT373430	1984/07/05	AGREEMENT Dev't Ag't			THE CORPORATION OF THE CITY OF NEPEAN	C
LT938497	1995/06/23	NOTICE OF LEASE		IMPERIAL OIL LIMITED	THE TDL GROUP LTD.	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

1545 Woodroffe Avenue

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #4

04657-0604 (LT)

PREPARED FOR CHERYL FRAGISKOS ON 2015/06/19 AT 12:56:31

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: CONSOLIDATION OF VARIOUS PROPERTIES PART OF LOT 30, CONCESSION 1, RIDEAU FRONT AS IN CR362577 AND PART 1 ON PLAN 5R4787 EXCEPT PART 1 PLAN 5R5400 AND CR363009 T/W CR363009; NEPEAN

widening → right-of-way road widening

widening

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
CONSOLIDATION FROM 04657-0588 04657-0589

PIN CREATION DATE:
1995/02/01

OWNERS' NAMES
IMPERIAL OIL LIMITED

CAPACITY SHARE
BENO

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1994/08/22 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1995/02/01						
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 1995/02/01 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
**	SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES					
**	AND ESCHEATS OR FORFEITURE TO THE CROWN.					
**	THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF					
**	IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY					
**	CONVENTION.					
**	ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.					
**DATE OF CONVERSION TO LAND TITLES: 1994/08/22 **						
CR362577	1957/08/19	TRANSFER	$10,500	Nesbitt, Clifford	IMPERIAL OIL LIMITED	C
	REMARKS: SKETCH ATTACHED					
5R4787	1980/01/11	PLAN REFERENCE				C
NS91901	1980/07/24	TRANSFER		MERIVAL DEVELOPMENTS LIMITED	IMPERIAL OIL LIMITED	C
NS110188	1981/02/12	AGREEMENT Site Plan Ag't		Remarks	THE CORPORATION OF THE CITY OF NEPEAN	C
	REMARKS: SKETCH ATTACHED					
NS246045	1984/06/28	AGREEMENT Site Plan Ag't			THE CORPORATION OF THE CITY OF NEPEAN	C
N672116	1993/09/17	AGREEMENT Dev't Ag't			THE CITY OF NEPEAN	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

Ontario ServiceOnatio

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #4

04657-0604 (LT)

PREPARED FOR CHERYL FRAGISKOS
ON 2015/06/19 AT 12:56:31

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

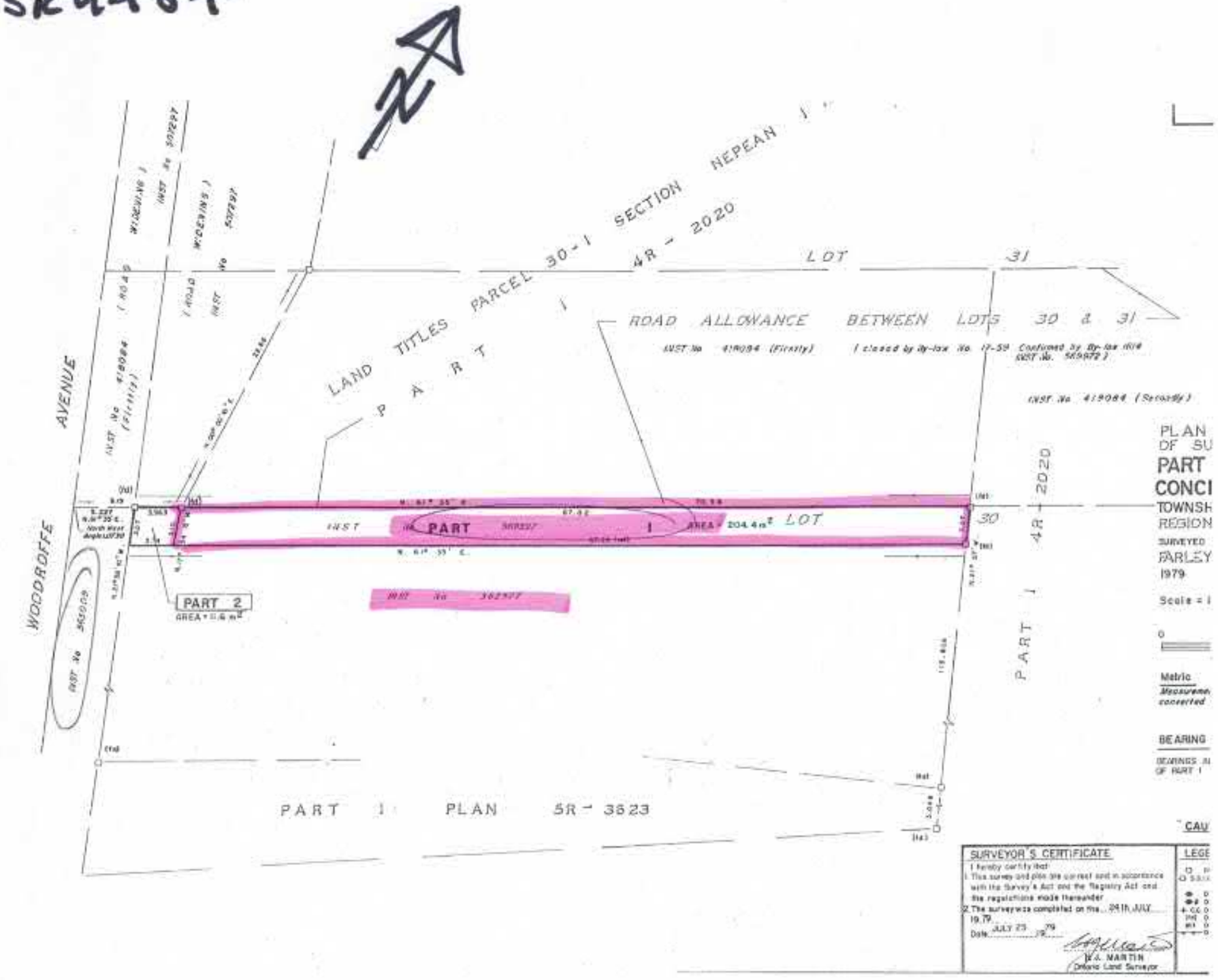
REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
N686141	1994/02/24	LIEN re: Construction Lien M. Nova Ceramic + Marble Tile Ltd.		*** DELETED AGAINST THIS PROPERTY *** re: Pt 1, 5R4787 $30,891.68 - Tim Hortons restaurant tile, etc. + P.I.N 04657-0589		
N687939	1994/03/18	ORDER		*** DELETED AGAINST THIS PROPERTY ***		
	REMARKS: N686141					
LT938492	1995/06/23	NOTICE OF LEASE		IMPERIAL OIL LIMITED	THE TDL GROUP LTD.	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

4R3336

N
LOT 31
ROAD ALLOWANCE BETWEEN LOTS 30 & 31
PART 1
PART 2
LOT 30
WOODROFFE AVENUE
PART 1 4R-2020
SURVEYOR'S CERTIFICATE
I hereby certify

SR4787



LAND TITLES PARCEL 30-1 SECTION NEPEAN 1
4R - 2020
LOT 31
ROAD ALLOWANCE BETWEEN LOTS 30 & 31
INST No 419084 (Firstly)
INST No 419084 (Secondly)
PART 1
PART 2
AREA = 204.4 m²
LOT 30
PART 1 4R - 2020
PART 1 PLAN 5R - 3623
WOODROFFE AVENUE
PLAN OF SU
PART
CONCI
TOWNSH
REGION
SURVEYED
FARLEY
1979
Scale = 1
Metric
BEARING
SURVEYOR'S CERTIFICATE
I hereby certify that
1. This survey and plan are correct and in accordance with the Survey's Act and the Registry Act and the regulations made thereunder
2. The survey was completed on the 24th JULY 1979
Date JULY 25 1979
H.J. MARTIN
Ontario Land Surveyor

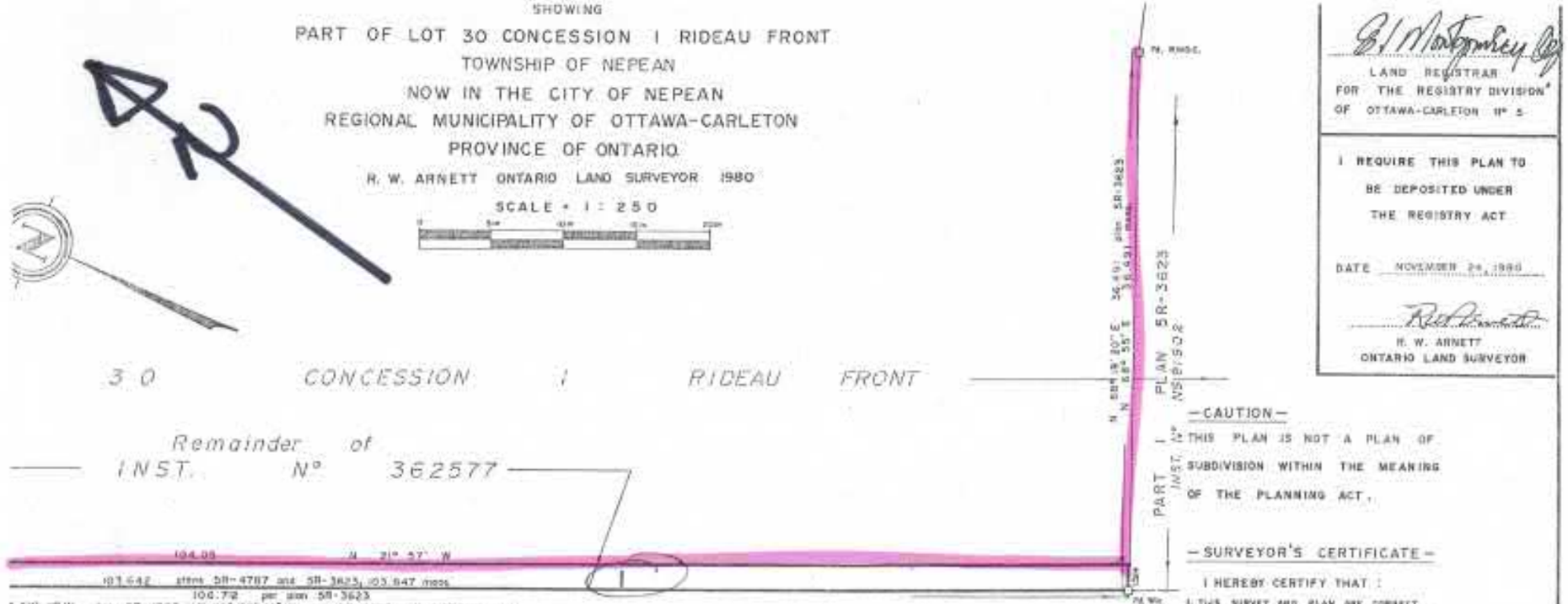
SR5400

SHOWING

PART OF LOT 30 CONCESSION I RIDEAU FRONT
TOWNSHIP OF NEPEAN
NOW IN THE CITY OF NEPEAN
REGIONAL MUNICIPALITY OF OTTAWA-CARLETON
PROVINCE OF ONTARIO

R. W. ARNETT ONTARIO LAND SURVEYOR 1980

SCALE • 1 : 250



LAND REGISTRAR
FOR THE REGISTRY DIVISION
OF OTTAWA-CARLETON N° 5

I REQUIRE THIS PLAN TO
BE DEPOSITED UNDER
THE REGISTRY ACT

DATE NOVEMBER 24, 1980

R. W. ARNETT
ONTARIO LAND SURVEYOR

— CAUTION —

THIS PLAN IS NOT A PLAN OF SUBDIVISION WITHIN THE MEANING OF THE PLANNING ACT.

— SURVEYOR'S CERTIFICATE —

I HEREBY CERTIFY THAT :

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE REGISTRY ACT AND THE REGULATIONS MADE THEREUNDER.
2. THE SURVEY WAS COMPLETED ON THE 24TH DAY OF NOVEMBER, 1980.

NOVEMBER 24, 1980
DATE

R. W. ARNETT
ONTARIO LAND SURVEYOR

— NOTE —

BEARINGS ARE ASTRONOMIC AND DERIVED FROM THE SOUTHERLY LIMITS OF PARTS 1 AND 2 PLAN SR-4757 SHOWN AS N 61° 35' E ON SAID PLAN.

— LEGEND —

(IF APPLICABLE)

- 1" Square STANDARD IRON BARS shown thus □ (S.I.B.)
- 5/8" Square IRON BARS shown thus ■ (S.I.)
- Short STANDARD IRON BAR shown thus □ (S.I.B.)
- ø denotes ROUND
- Fd. denotes FOUND
- Meas. denotes MEASURED
- Wit. denotes WITNESS
- Acc. denotes ACCEPTED
- INST. denotes INSTRUMENT
- Post and Wire Fence shown thus -•-•-•-•-
- R.M.O.C. denotes REGIONAL MUNICIPALITY OF OTTAWA-CARLETON
- 647 denotes H.R.FARLEY O.L.S.
- 725 denotes R.W.ARNETT O.L.S.

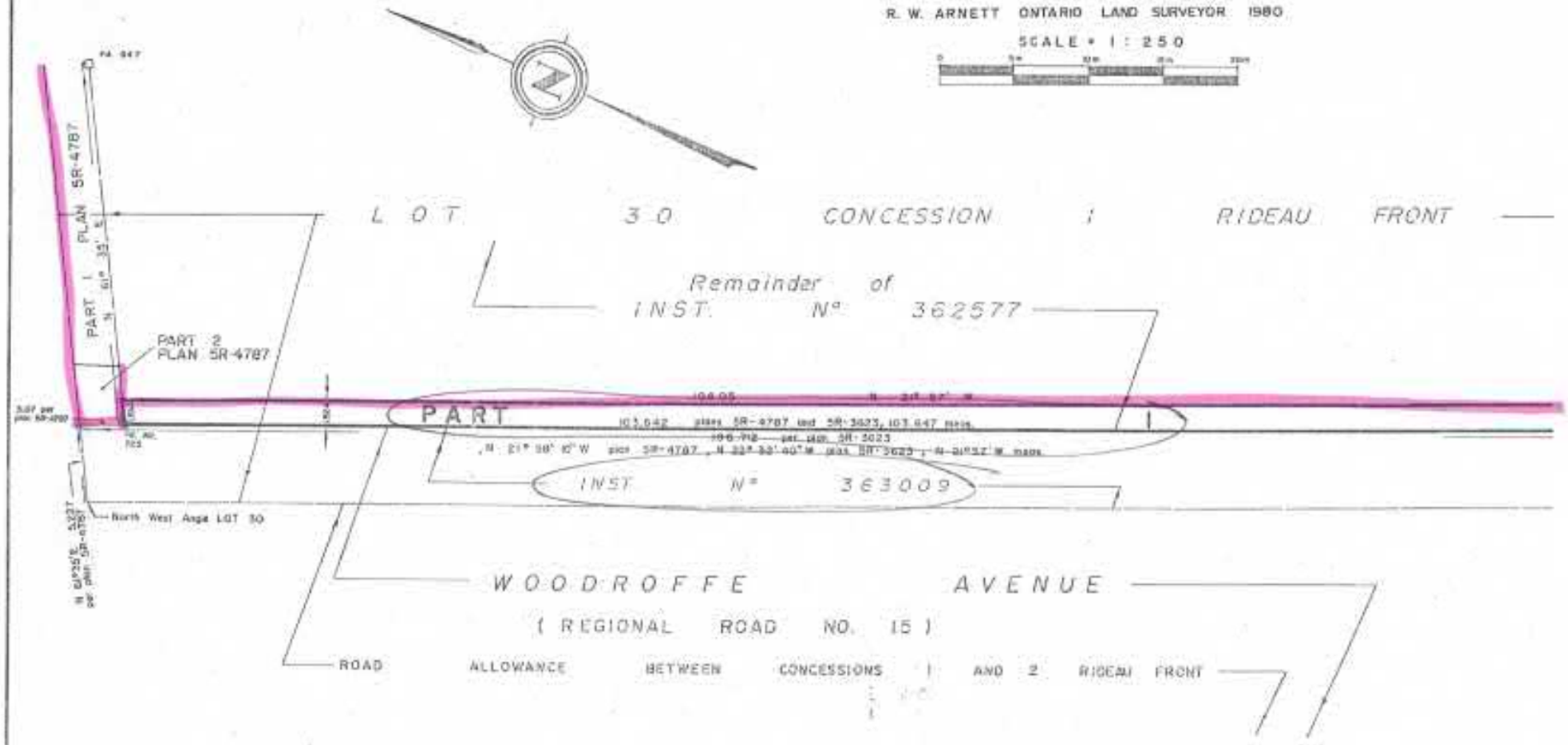
R. W. ARNETT
ONTARIO LAND SURVEYOR
OTTAWA ONTARIO

5R5400

PART OF LOT 30 CONCESSION I RIDEAU FRONT
TOWNSHIP OF NEPEAN
NOW IN THE CITY OF NEPEAN
REGIONAL MUNICIPALITY OF OTTAWA-CARLETON
PROVINCE OF ONTARIO

R. W. ARNETT ONTARIO LAND SURVEYOR 1980

SCALE 1 : 250



-NOTE-

BEARINGS ARE ASTRONOMIC AND DERIVED FROM THE SOUTHERLY LIMITS OF PARTS 1 AND 2 PLAN SR-4787 SHOWN AS N 61° 35'E ON SAID PLAN.

Ontario ServiceOntario

LAND REGISTRY OFFICE #4

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

04657-0596 (LT)

PREPARED FOR CHERYL FRAGISKOS
ON 2015/06/19 AT 12:58:22

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LT 31, CON 2 RIDEAU FRONT , AS IN CR507481, CR522488 AND CR522489 ; NEPEAN

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
FIRST CONVERSION FROM BOOK NP11

Adjoining Land
Vacant Land

PIN CREATION DATE:
1994/08/22

OWNERS' NAMES
THE REGIONAL MUNICIPALITY OF OTTAWA-CARLETON PIO

CAPACITY SHARE
BENO

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1994/08/22 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1994/08/22						
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 1994/08/19 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 1994/08/22 **						
CR498428	1965/08/28	BYLAW				C
	REMARKS: SKETCH ATTACHED					
CR507481	1966/03/25	QUIT CLAIM TRNSFR	$60,000		THE CORPORATION OF THE COUNTY OF CARLETON	C
	REMARKS: SKETCH ATTACHED					
CR522488	1967/03/15	QUIT CLAIM TRNSFR	$8,375		THE CORPORATION OF THE COUNTY OF CARLETON	C
	REMARKS: SKETCH ATTACHED					
CR522489	1967/03/15	QUIT CLAIM TRNSFR	$2,750		THE CORPORATION OF THE COUNTY OF CARLETON PIO	C
	REMARKS: SKETCH ATTACHED					

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

Ontario ServiceOnTario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #4

04650-0189 (LT)

PREPARED FOR CHERYL FRAGISKOS ON 2015/06/19 AT 12:58:43

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: BLK D PL 378656 AND PT BLK C PL 378656 EXCEPT PARTS 1 AND 2 PL 4R2325,PTS 4 AND 5 PL 4R18294 AND CR524479 "DESCRIPTION IN CR453919 MAY NOT BE ACCEPTABLE IN FUTURE." S/T CR429573, CR659367, NP44090, NP48923. OTTAWA.

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
DIVISION FROM 04650-0177

PIN CREATION DATE:
2007/04/19

OWNERS' NAMES
HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF PUBLIC INFRASTRUCTURE RENEWAL

CAPACITY SHARE

P10

Adjoining Land

Vacant Land

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2007/04/19 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
**	SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *					
**	AND ESCHEATS OR FORFEITURE TO THE CROWN.					
**	THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF					
**	IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY					
**	CONVENTION.					
**	ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.					
**DATE OF CONVERSION TO LAND TITLES: 1993/04/19 **						
NP44090	1934/01/16	TRANSFER EASEMENT			THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO	C
	REMARKS: SKETCH ATTACHED					
NP48923	1942/02/03	TRANSFER EASEMENT			THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO SKETCH ATTACHED	C
CR384375	1959/02/18	AGREEMENT			THE CORPORATION OF THE TOWNSHIP OF NEPEAN	C
CR429573	1961/08/21	TRANSFER EASEMENT			BELL TELEPHONE COMPANY OF CANADA	C
	REMARKS: SKETCH ATTACHED					
CR453919	1962/12/27	TRANSFER	$86,000		THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO	C
	REMARKS: SKETCH ATTACHED					
4R413	1972/12/18	PLAN REFERENCE				C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
CR659367	1974/09/04	TRANSFER EASEMENT			THE CORPORATION OF THE TOWNSHIP OF NEPEAN	C
OC701502	2007/03/29	APL (GENERAL)		HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF PUBLIC INFRASTRUCTURE RENEWAL		C
		ch. name from hydro by order		PIO		
OC701503	2007/03/29	NOTICE		HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER FOR PUBLIC INFRASTRUCTURE RENEWAL		C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

Ontario ServiceOnatario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #4

04629-0930 (LT)

PREPARED FOR CHERYL FRAGISKOS
ON 2015/06/19 AT 12:59:05

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: FIRSTLY; PT LT 30, CON 1 RIDEAU FRONT, AS IN CR564214 W OF WLY LIMIT PT 1 PL 4R1941, EXCEPT PTS 1 AND 2 4R2603, PT 3 4R18294; SECONDLY; PT LT 30, CON 1 RIDEAU FRONT, AS IN CR487089 W OF WLY LIMIT PT 1 4R1941; NEPEAN. S/T CR659367. OTTAWA.

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
DIVISION FROM 04629-0002

CAPACITY SHARE

PIN CREATION DATE:
2007/04/19

OWNERS' NAMES
HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF PUBLIC INFRASTRUCTURE RENEWAL

P10

Adjoining Land
Vacant Land

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2007/04/19 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
**	SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *					
**	AND ESCHEATS OR FORFEITURE TO THE CROWN.					
**	THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF					
**	IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY					
**	CONVENTION.					
**	ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.					
**DATE OF CONVERSION TO LAND TITLES: 1994/08/22 **						
CR487089	1964/12/03	TRANSFER	$74,880		THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO	C
	REMARKS: SKETCH ATTACHED					
CR564214	1969/08/29	TRANSFER	$74,728		THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO	C
	REMARKS: SKETCH ATTACHED					
4R413	1972/12/18	PLAN REFERENCE				C
CR659367	1974/09/04	TRANSFER EASEMENT			THE CORPORATION OF THE TOWNSHIP OF NEPEAN	C
LT1237754	1999/10/20	APL (GENERAL)		THE REGIONAL MUNICIPALITY OF OTTAWA-CARLETON		C
	REMARKS: CR659367 AND CR644821					
4R16328	2000/12/19	PLAN REFERENCE				C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
LT1416426	2001/08/16	NOTICE	$1	THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO	BELL CANADA	C
OC701502	2007/03/29	APL (GENERAL)		HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF PUBLIC INFRASTRUCTURE RENEWAL PIO		C
		→ change name from hydro by order				
OC701503	2007/03/29	NOTICE		HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER FOR PUBLIC INFRASTRUCTURE RENEWAL		C

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #4

15504-0001 (LT)

PREPARED FOR CHERYL FRAGISKOS
ON 2015/06/19 AT 12:59:25

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: UNIT 1, LEVEL 1, CARLETON CONDOMINIUM PLAN NO. 504, FIRSTLY: LT 120 PLAN 4M332; S/T 288818, 288819, 288820, 499398, 564824E; SECONDLY: LT 128 PLAN 4M332; S/T 288818, 288819, 288820; THIRDLY: LT 129 PLAN 4M332; S/T 288818, 288819, 288820 AS IN SCHEDULE 'A' OF DECLARATION 693899 NEPEAN

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
ABSOLUTE

RECENTLY:
FIRST CONVERSION FROM BOOK CC354

Adjoining Land
136A Medhurst Drive

PIN CREATION DATE:
1993/03/08

OWNERS' NAMES
CARLING REALTY COMPANY LIMITED PID

CAPACITY SHARE
BENO

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1993/03/08 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1993/03/08						
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 1992/11/25 **						
LT288813	1982/06/08	NOTICE			THE CORPORATION OF THE CITY OF NEPEAN	C
LT288814	1982/06/08	NOTICE			THE CORPORATION OF THE CITY OF NEPEAN	C
LT288815	1982/06/08	NOTICE			THE REGIONAL MUNICIPALITY OF OTTAWA-CARLETON	C
LT288818	1982/06/08	TRANSFER EASEMENT			THE HYDRO-ELECTRIC COMMISSION OF THE CITY OF NEPEAN	C
LT288819	1982/06/08	TRANSFER EASEMENT			BELL CANADA	C
LT288820	1982/06/08	TRANSFER EASEMENT			OTTAWA CABLEVISION LIMITED	C
LT489289	1987/01/07	CHARGE		*** COMPLETELY DELETED ***	MERIVALE DEVELOPMENTS LIMITED	
LT496579	1987/03/16	NOTICE			THE CORPORATION OF THE CITY OF NEPEAN	C
LT499397	1987/04/03	NOTICE			THE CORPORATION OF THE CITY OF NEPEAN THE HYDRO-ELECTRIC COMMISSION OF THE CITY OF NEPEAN	C
LT499398	1987/04/03	TRANSFER EASEMENT			THE HYDRO-ELECTRIC COMMISSION OF THE CITY OF NEPEAN	C
LT510165	1987/06/16	CHARGE		*** DELETED AGAINST THIS PROPERTY ***	THE MUTUAL LIFE ASSURANCE COMPANY OF CANADA	
LT510166	1987/06/16	POSTPONEMENT		*** DELETED AGAINST THIS PROPERTY ***		

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
	REMARKS: 489289, 510165					
LT510200	1987/06/16	NOTICE		*** DELETED AGAINST THIS PROPERTY ***		
LT538471	1987/12/03	NOTICE				C
LT551823	1988/03/24	POSTPONEMENT		*** COMPLETELY DELETED ***		
	REMARKS: 510165, 538471					
LT564824	1988/06/22	POSTPONEMENT				C
	REMARKS: 489289, 564824					
LT564824E	1988/06/22	TRANSFER EASEMENT			OTTAWA CABLEVISION LIMITED	C
LT689885	1990/08/30	NOTICE			THE REGIONAL MUNICIPALITY OF OTTAWA-CARLETON	C
LT693899	1990/09/26	DECLARATION CONDO			CARLING REALTY COMPANY LIMITED	C
LT748025	1991/11/19	BYLAW				C
	REMARKS: NO. 1					
LT830043	1993/05/26	DISCH OF CHARGE		*** COMPLETELY DELETED *** MERIVALE DEVELOPMENTS LIMITED		
	REMARKS: RE: LT489289					
LT830457	1993/05/27	NOTICE		*** DELETED AGAINST THIS PROPERTY *** CARLING REALTY COMPANY LIMITED	THE MUTUAL LIFE ASSURANCE COMPANY OF CANADA	
	REMARKS: LT510165					
LT938147	1995/06/22	NOTICE		*** DELETED AGAINST THIS PROPERTY *** CARLING REALTY COMPANY LIMITED	THE MUTUAL LIFE ASSURANCE COMPANY OF CANADA	
	REMARKS: LT510165					
LT971064	1996/04/02	BYLAW		CARLETON CONDOMINIUM CORPORATION NO 504		C
	REMARKS: BYLAW NO 2					
LT999473	1996/09/13	BYLAW		CARLETON CONDOMINIUM CORPORATION NO 504		C
	REMARKS: BYLAW NO 3					

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
LT1003666	1996/10/03	APL (GENERAL)		CARLETON CONDOMINIUM CORPORATION NO. 504		C
	REMARKS: AMENDMENT TO DECLARATION LT693899					
LT1117606	1998/04/28	NOTICE		*** DELETED AGAINST THIS PROPERTY *** CARLING REALTY COMPANY LIMITED	THE MUTUAL LIFE ASSURANCE COMPANY OF CANADA	
	REMARKS: LT510165					
LT1117607	1998/04/28	NOTICE		*** DELETED AGAINST THIS PROPERTY *** CARLING REALTY COMPANY LIMITED	THE MUTUAL LIFE ASSURANCE COMPANY OF CANADA	
	REMARKS: LT510165					
OC720174	2007/05/22	CONDO BYLAW/98		CARLETON CONDOMINIUM CORPORATION NO. 504		C
	REMARKS: BY-LAW NO. 4.					
OC956557	2009/02/27	DISCH OF CHARGE		*** COMPLETELY DELETED *** CLARICA LIFE INSURANCE COMPANY		
	REMARKS: RE: LT510165					

APPENDIX E

Municipal Directories Report

INFORMATION INTELLIGENCE

600, 175 Commerce Valley Dr. W
Markham, Ontario
L3T 7P6

T: 905.882.6300
Toll Free: 1.800.268.8080
F: 905.695.6543

An SCM Company
www.optaintel.ca

City Directory Information Source
Vernon's Ottawa, ON City Directory

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 2011	
Site Listing:	-Esso
Adjacent Properties:	
136A Medhurst Drive	-Individual Designations Not Available -Res (1 tenant)
136 Medhurst Drive	-Individual Designations Not Available -Res (1 tenant)
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 2005/06	
Site Listing:	-Esso
Adjacent Properties:	
136A Medhurst Drive	-Res (1 tenant)
136 Medhurst Drive	-Res (3 tenant)
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 1999/00	
Site Listing:	-Esso

Adjacent Properties:	
136A Medhurst Drive	-Res (1 tenant)
136 Medhurst Drive	-Res (3 tenant)
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 1995/96	
Site Listing:	-Esso
Adjacent Properties:	
136A Medhurst Drive	-Res (1 tenant)
136 Medhurst Drive	-Res (3 tenant)
Vacant Lot	-No Civic Address

Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 1988/89	
Site Listing:	-Esso
Adjacent Properties:	
136A Medhurst Drive	-Address Not Listed
136 Medhurst Drive	-Address Not Listed
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario

Year: 1984	
Site Listing:	-Esso
Adjacent Properties:	
136A Medhurst Drive	-Address Not Listed
136 Medhurst Drive	-Address Not Listed
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 1979	
Site Listing:	-Res (1 tenant)
Adjacent Properties:	
136A Medhurst Drive	-Address Not Listed

136 Medhurst Drive	-Address Not Listed
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 1974	
Site Listing:	-Esso
Adjacent Properties:	
136A Medhurst Drive	-Address Not Listed
136 Medhurst Drive	-Address Not Listed
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 1969	
Site Listing:	-Address Not Listed
Adjacent Properties:	
136A Medhurst Drive	-Address Not Listed
136 Medhurst Drive	-Address Not Listed
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

PROJECT NUMBER: 21063	
Site Address:	1545 Woodroffe Avenue, Ottawa, Ontario
Year: 1964	
Site Listing:	-Address Not Listed
Adjacent Properties:	

136A Medhurst Drive	-Address Not Listed
136 Medhurst Drive	-Address Not Listed
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address
Vacant Lot	-No Civic Address

1545 Woodroffe Avenue, Ottawa, Ontario is last listed for 1973 within the city directory archives

APPENDIX F

EcoLog ERIS Report

ENVIRONMENTAL RISK INFORMATION SERVICE

DATABASE REPORT

Project Property:	*IOL* *1545 WOODROFFE AVE* *NEPEAN ON*
P.O. Number:	
Report Type:	*Standard Report*
Order #:	*20150427152*
Requested by:	*SNC-Lavalin Inc.*
Date:	*April 29, 2015*

Ecolog ERIS Ltd.
Environmental Risk Information Service Ltd. (ERIS)
A division of Glacier Media Inc.
P: 1.866.517.5204
E: info@erisinfo.com

www.erisinfo.com

Table of Contents

Table of Contents....1
Executive Summary....2
Executive Summary: Report Summary....3
Executive Summary: Site Report Summary - Project Property....5
Executive Summary: Site Report Summary - Surrounding Properties....9
Executive Summary: Summary By Data Source....11
Map....19
Aerial....20
Detail Report....21
Unplottable Summary....59
Unplottable Report....62
Appendix: Database Descriptions....80
Definitions....90

Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as a database review of environmental records.

License for use of information in Report: No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

Your Liability for misuse: Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by EcoLog Environmental Risk Information Services Ltd ("ERIS") using various sources of information, including information provided by Federal and Provincial government departments. The report applies only to the address and up to the date specified on the cover of this report, and any alterations or deviation from this description will require a new report. This report and the data contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein and does not constitute a legal opinion nor medical advice. Although ERIS has endeavored to present you with information that is accurate, EcoLog ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of EcoLog ERIS is limited to the monetary value paid for this report.

Trademark and Copyright: You may not use the ERIS trademarks or attribute any work to ERIS other than as outlined above. This Service and Report(s) are protected by copyright owned by EcoLog ERIS Ltd. Copyright in data used in the Service or Report(s) (the "Data") is owned by EcoLog ERIS or its licensors. The Service, Report(s) and Data may not be copied or reproduced in whole or in any substantial part without prior written consent of EcoLog ERIS.

Executive Summary

Property Information:

Project Property:		*IOL* *1545 WOODROFFE AVE NEPEAN ON*
P.O. Number:		
Coordinates:		
	Latitude:	*45.335134*
	Longitude:	*-75.752142*
	UTM Northing:	*5,020,455.76*
	UTM Easting:	*441,066.32*
	UTM Zone:	*UTM Zone 18T*
Elevation:		*295 FT* *90.00 M*

Order Information:

Order No.:	*20150427152*
Date Requested:	*01/05/2015*
Requested by:	*SNC-Lavalin Inc.*
Report Type:	*Standard Report*

Additional Products:

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Within 0.25 km	Total
AAGR	Abandoned Aggregate Inventory	Y	0	0	0
AGR	Aggregate Inventory	Y	0	0	0
AMIS	Abandoned Mine Information System	Y	0	0	0
ANDR	Anderson's Waste Disposal Sites	Y	0	0	0
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
BORE	Borehole	Y	0	16	16
CA	Certificates of Approval	Y	2	0	2
CFOT	Commercial Fuel Oil Tanks	Y	0	0	0
CHEM	Chemical Register	Y	0	0	0
COAL	Inventory of Coal Gasification Plants and Coal Tar Sites	Y	0	0	0
CONV	Compliance and Convictions	Y	0	0	0
CPU	Certificates of Property Use	Y	0	0	0
DRL	Drill Hole Database	Y	0	0	0
EASR	Environmental Activity and Sector Registry	Y	0	0	0
EBR	Environmental Registry	Y	0	0	0
ECA	Environmental Compliance Approval	Y	0	0	0
EEM	Environmental Effects Monitoring	Y	0	0	0
EHS	ERIS Historical Searches	Y	1	0	1
EIIS	Environmental Issues Inventory System	Y	0	0	0
EXP	List of TSSA Expired Facilities	Y	32	0	32
FCON	Federal Convictions	Y	0	0	0
FCS	Contaminated Sites on Federal Land	Y	0	0	0
FOFT	Fisheries & Oceans Fuel Tanks	Y	0	0	0
FST	Fuel Storage Tank	Y	4	0	4
FSTH	Fuel Storage Tank - Historic	Y	2	0	2
GEN	Ontario Regulation 347 Waste Generators Summary	Y	6	7	13
HINC	TSSA Historic Incidents	Y	1	1	2
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	TSSA Incidents	Y	0	0	0
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defence & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defence & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0

Database	Name	Searched	Project Property	Within 0.25 km	Total
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGW	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PINC	TSSA Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	1	0	1
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	4	0	4
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPL	Ontario Spills	Y	3	1	4
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	TSSA Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	Y	1	11	12
	Total:		57	36	93

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev diff m	Page Number
1	CA	IMPERIAL OIL LIMITED	1545 WOODROFFE AVENUE NEPEAN CITY ON K2G 1W2	E/0.1	0.00	21
1	CA	IMPERIAL OIL LIMITED	1545 WOODROFFE AVE./TIM HORTON NEPEAN CITY ON K2G 1W2	E/0.1	0.00	21
1	EHS		1545 Woodroffe Avenue Nepean ON K2G 1W2	E/0.1	0.00	21
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	21
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	22
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	22
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	22
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	22
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	23
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	23
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	23
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	23
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	24
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	24
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	24
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	24
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	25

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev diff m	Page Number
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	25
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	25
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	25
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	26
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	26
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	26
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	26
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	27
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	27
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	27
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	27
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	28
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	28
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	28
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	28
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	29
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	29
1	EXP	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E/0.1	0.00	29
1	FST	6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	29

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev diff m	Page Number
1	FST	6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	30
1	FST	6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	30
1	FST	6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	30
1	FSTH	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	31
1	FSTH	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E/0.1	0.00	31
1	GEN	Imperial Oil	1545 Woodroffe Avenue Nepean ON K2G 1W2	E/0.1	0.00	33
1	GEN	Imperial Oil	1545 Woodroffe Avenue Nepean ON	E/0.1	0.00	33
1	GEN	Imperial Oil	1545 Woodroffe Avenue Nepean ON	E/0.1	0.00	33
1	GEN	Imperial Oil	1545 Woodroffe Avenue Nepean ON	E/0.1	0.00	34
1	GEN	Imperial Oil	1545 Woodroffe Avenue Nepean ON	E/0.1	0.00	34
1	GEN	Imperial Oil	1545 Woodroffe Avenue Nepean ON	E/0.1	0.00	34
1	HINC		1545 WOODROFFE AVENUE NEPEAN ON K2G 1W2	E/0.1	0.00	35
1	PRT	1070427 ONTARIO LTD O/A WOODROFFE ESSO	1545 WOODRUFFE AV NEPEAN ON K2G1W2	E/0.1	0.00	35
1	RST	ESSO GAS STATION	1545 WOODROFFE AVE NEPEAN ON K2G1W2	E/0.1	0.00	35
1	RST	ESSO TIGER EXPRESS	1545 WOODROFFE AVE NEPEAN ON K2G1W2	E/0.1	0.00	36
1	RST	ESSO	1545 WOODROFFE AVE NEPEAN ON K2G 1W2	E/0.1	0.00	36
1	RST	ESSO GAS STATION	1545 WOODROFFE AVE NEPEAN ON K2G 1W2	E/0.1	0.00	36
1	SPL	QUEENSWAY TANK LINES	1545 WOODROFFE AVE ESSO SERVICE STATION. TANK TRUCK (CARGO) NEPEAN CITY ON K2G 1W2	E/0.1	0.00	36
1	SPL		1545 Woodroffe Avenue, Nepean Ottawa ON	E/0.1	0.00	36

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev diff m	Page Number
1	SPL	Imperial Oil Limited	1545 Woodroffe Ave Ottawa ON	E/0.1	0.00	37
1	WWIS		NEPEAN ON	E/0.1	0.00	37

Executive Summary: Site Report Summary - Surrounding *Properties*

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev Diff m	Page Number
2	BORE		ON	WSW/46.9	-0.83	37
3	WWIS		lot 30 con 1 ON	SE/55.2	0.00	38
4	BORE		ON	SSW/67.9	-1.00	38
5	WWIS		OTTAWA ON	SW/72.2	-1.00	39
6	WWIS		Ottawa ON	SSE/80.1	0.00	40
7	WWIS		Ottawa ON	S/82.8	-1.00	40
8	WWIS		Ottawa ON	SSE/91.5	0.00	41
9	WWIS		Ottawa ON	S/95.8	-0.98	41
10	GEN	CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE/100.2	0.00	42
10	GEN	CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE/100.2	0.00	42
10	GEN	CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON K2G 5L1	ESE/100.2	0.00	43
10	GEN	CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE/100.2	0.00	43
10	GEN	CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON K2G 5L1	ESE/100.2	0.00	43
10	GEN	CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON K2G 5L1	ESE/100.2	0.00	44
10	GEN	CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE/100.2	0.00	44
10	HINC		72A BROCKINGTON CRESCENT NEPEAN ON K2G 5L1	ESE/100.2	0.00	44
11	WWIS		Ottawa ON	SE/108.0	0.00	45
12	WWIS		Ottawa ON	SSW/108.1	-1.00	45
13	WWIS		lot 30 con 1 Ottawa ON	SSE/118.3	-0.49	46
14	WWIS		Ottawa ON	SSW/118.8	-1.00	47
15	BORE		ON	NW/132.6	-1.00	47
16	WWIS		Ottawa ON	SSE/134.9	-1.00	48

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev Diff m	Page Number
17	SPL	PUC	WOODROFFE AVE AT KNOXDALE MOTOR VEHICLE (OPERATING FLUID) OTTAWA CITY ON	S/146.1	-1.00	48
18	BORE		ON	S/151.9	-1.00	49
19	BORE		ON	SSE/157.3	-0.46	49
20	BORE		ON	NNE/200.4	0.00	50
21	BORE		ON	NW/202.2	-1.00	51
22	BORE		ON	N/206.4	0.00	51
23	BORE		ON	S/208.4	-1.00	52
24	BORE		ON	NNW/215.9	-1.00	53
25	BORE		ON	NW/225.0	-1.00	53
26	BORE		ON	S/232.9	-1.00	54
27	BORE		ON	SSW/235.7	-2.00	55
28	BORE		ON	S/242.0	-1.00	56
29	BORE		ON	WNW/244.8	-2.00	56
30	BORE		ON	NNW/245.9	-1.00	57

Executive Summary: Summary By Data Source

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2014 has found that there are 16 BORE site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
	ON	NNE	200.38	20
	ON	N	206.44	22

Lower Elevation	Address	Direction	Distance m	Map Key
	ON	WSW	46.85	2
	ON	SSW	67.92	4
	ON	NW	132.65	15
	ON	S	151.90	18
	ON	SSE	157.34	19
	ON	NW	202.22	21
	ON	S	208.39	23
	ON	NNW	215.91	24
	ON	NW	225.01	25
	ON	S	232.89	26
	ON	SSW	235.66	27
	ON	S	242.03	28
	ON	WNW	244.82	29
	ON	NNW	245.89	30

CA - Certificates of Approval

A search of the CA database, dated 1985-Oct 30, 2011* has found that there are 2 CA site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
IMPERIAL OIL LIMITED	1545 WOODROFFE AVE./TIM HORTON NEPEAN CITY ON K2G 1W2	E	0.07	1
IMPERIAL OIL LIMITED	1545 WOODROFFE AVENUE NEPEAN CITY ON K2G 1W2	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Aug 2014 has found that there are 1 EHS site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
	1545 Woodroffe Avenue Nepean ON K2G 1W2	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key

EXP - List of TSSA Expired Facilities

A search of the EXP database, dated Current to Nov 2014 has found that there are 32 EXP site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key

FST - Fuel Storage Tank

A search of the FST database, dated 2010-Nov 2014 has found that there are 4 FST site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
6161278 CANADA INC	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key

FSTH - Fuel Storage Tank - Historic

A search of the FSTH database, dated Pre-Jan 2010* has found that there are 2 FSTH site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	1545 WOODROFFE AV NEPEAN ON K2G 1W2	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Apr 2014 has found that there are 13 GEN site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
Imperial Oil	1545 Woodroffe Avenue Nepean ON	E	0.07	1
Imperial Oil	1545 Woodroffe Avenue Nepean ON	E	0.07	1
Imperial Oil	1545 Woodroffe Avenue Nepean ON	E	0.07	1
Imperial Oil	1545 Woodroffe Avenue Nepean ON	E	0.07	1
Imperial Oil	1545 Woodroffe Avenue Nepean ON	E	0.07	1
Imperial Oil	1545 Woodroffe Avenue Nepean ON K2G 1W2	E	0.07	1
CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE	100.15	10
CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON K2G 5L1	ESE	100.15	10
CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON K2G 5L1	ESE	100.15	10
CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON K2G 5L1	ESE	100.15	10
CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE	100.15	10
CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE	100.15	10

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
CARLING REALTY COMPANY LIMITED	72G Brockington Cres. OTTAWA ON	ESE	100.15	10

Lower Elevation	Address	Direction	Distance m	Map Key

HINC - TSSA Historic Incidents

A search of the HINC database, dated 2006-June 2009* has found that there are 2 HINC site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
	1545 WOODROFFE AVENUE NEPEAN ON K2G 1W2	E	0.07	1
	72A BROCKINGTON CRESCENT NEPEAN ON K2G 5L1	ESE	100.15	10

Lower Elevation	Address	Direction	Distance m	Map Key

PRT - Private and Retail Fuel Storage Tanks

A search of the PRT database, dated 1989-1996* has found that there are 1 PRT site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
1070427 ONTARIO LTD O/A WOODROFFE ESSO	1545 WOODRUFFE AV NEPEAN ON K2G1W2	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key

RST - Retail Fuel Storage Tanks

A search of the RST database, dated 1999-Jul 2014 has found that there are 4 RST site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
ESSO GAS STATION	1545 WOODROFFE AVE NEPEAN ON K2G 1W2	E	0.07	1
ESSO GAS STATION	1545 WOODROFFE AVE NEPEAN ON K2G1W2	E	0.07	1
ESSO	1545 WOODROFFE AVE NEPEAN ON K2G 1W2	E	0.07	1
ESSO TIGER EXPRESS	1545 WOODROFFE AVE NEPEAN ON K2G1W2	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key

SPL - Ontario Spills

A search of the SPL database, dated 1988-Feb 2014 has found that there are 4 SPL site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
QUEENSWAY TANK LINES	1545 WOODROFFE AVE ESSO SERVICE STATION. TANK TRUCK (CARGO) NEPEAN CITY ON K2G 1W2	E	0.07	1
	1545 Woodroffe Avenue, Nepean Ottawa ON	E	0.07	1
Imperial Oil Limited	1545 Woodroffe Ave Ottawa ON	E	0.07	1

Lower Elevation	Address	Direction	Distance m	Map Key
PUC	WOODROFFE AVE AT KNOXDALE MOTOR VEHICLE (OPERATING FLUID) OTTAWA CITY ON	S	146.14	17

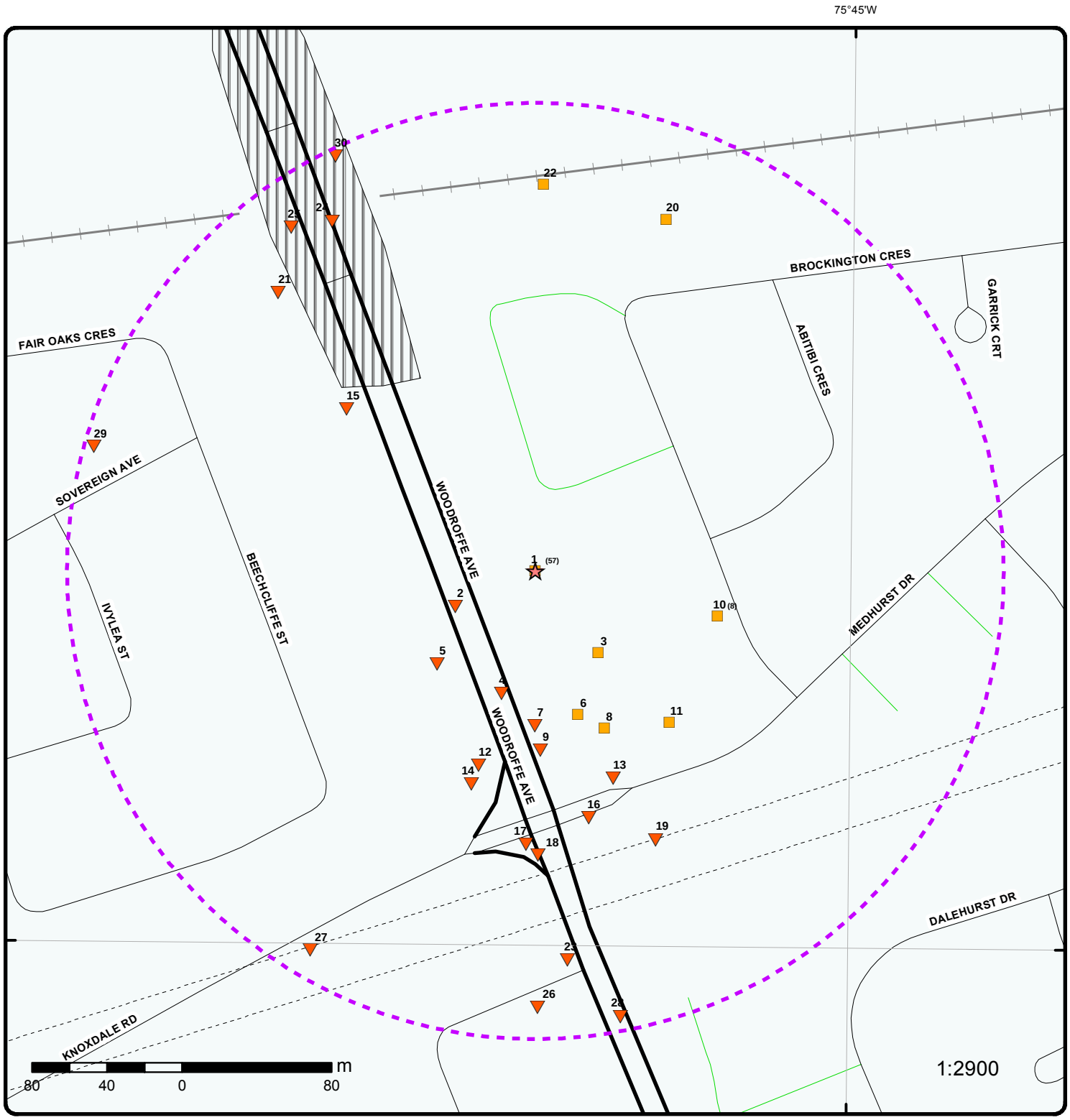
WWIS - Water Well Information System

A search of the WWIS database, dated 1955-Mar 2014 has found that there are 12 WWIS site(s) within approximately 0.25 kilometers of the project property.

Equal/Higher Elevation	Address	Direction	Distance m	Map Key
	NEPEAN ON	E	0.07	1
	lot 30 con 1 ON	SE	55.22	3
	Ottawa ON	SSE	80.05	6
	Ottawa ON	SSE	91.46	8
	Ottawa ON	SE	107.97	11

Lower Elevation	Address	Direction	Distance m	Map Key
	OTTAWA ON	SW	72.20	5
	Ottawa ON	S	82.77	7
	Ottawa ON	S	95.83	9
	Ottawa ON	SSW	108.06	12

lot 30 con 1 Ottawa ON	SSE	118.30	13
Ottawa ON	SSW	118.84	14
Ottawa ON	SSE	134.90	16



Map

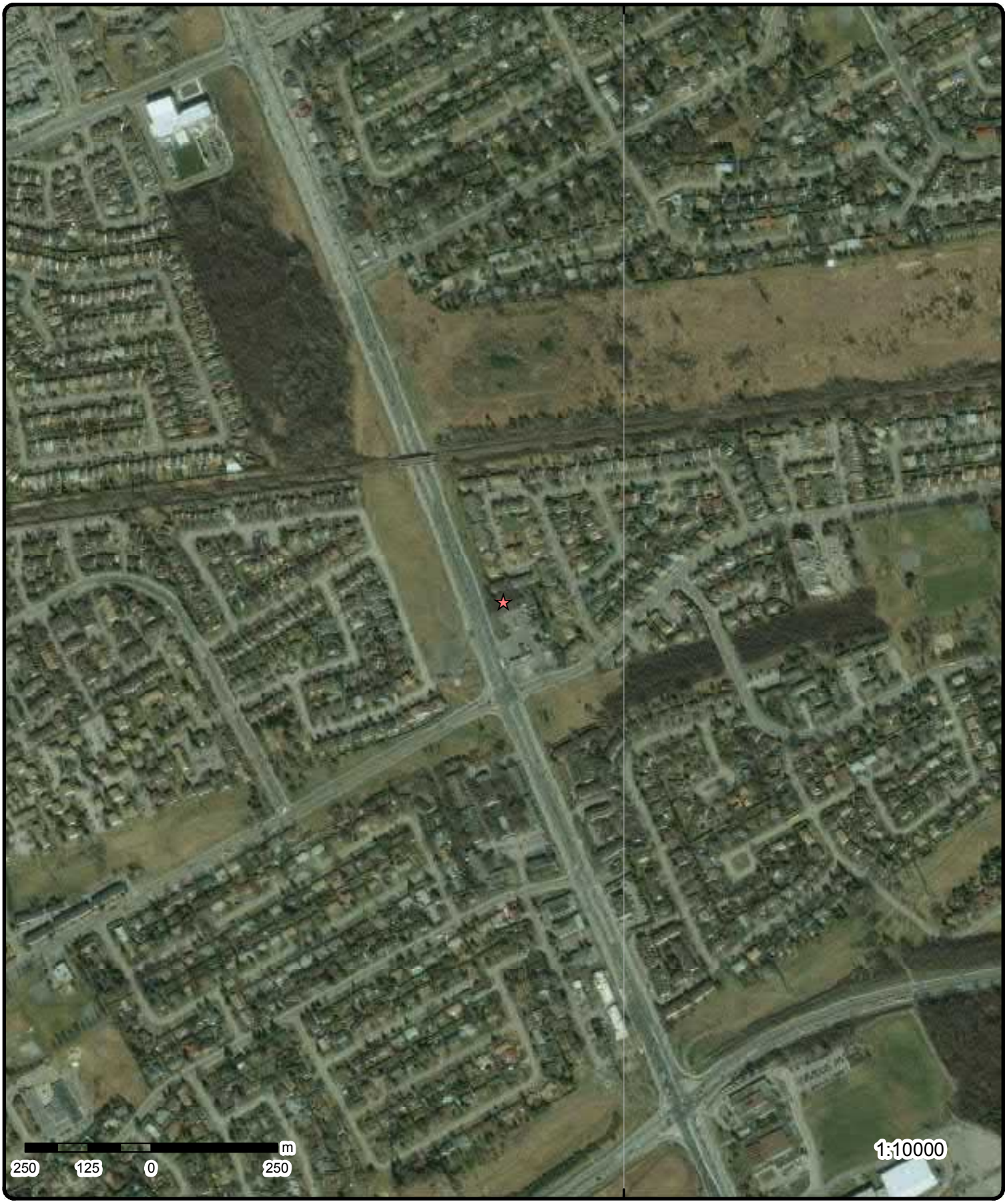
Order No: 20150427152

Address: 1545 WOODROFFE AVE, NEPEAN, ON

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- Pipelines and Transmission
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

Source: © 2014 DMTI Spatial Inc.

© Ecolog ERIS Ltd



Aerial

Order No: 20150427152

Address: 1545 WOODROFFE AVE, NEPEAN, ON

Source: ESRI World Imagery, Updated October 2014

© Ecolog ERIS Ltd

Detail Report

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	1 of 57	E/0.1	90.0	IMPERIAL OIL LIMITED 1545 WOODROFFE AVENUE NEPEAN CITY ON K2G 1W2	CA

Certificate #:	8-4106-93-
Application Year:	93
Issue Date:	9/30/1993
Approval Type:	Industrial air
Status:	Cancelled
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	KITCHEN EXHAUST FAN FOR TIM HORTONS
Contaminants:	
Emission Control:	

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	2 of 57	E/0.1	90.0	IMPERIAL OIL LIMITED 1545 WOODROFFE AVE./TIM HORTON NEPEAN CITY ON K2G 1W2	CA

Certificate #:	8-4106-93-
Application Year:	93
Issue Date:	2/16/1994
Approval Type:	Industrial air
Status:	Approved in 1994
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	KTICHEN EXHAUST
Contaminants:	Odour/Fumes
Emission Control:	Panel Filter

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	3 of 57	E/0.1	90.0	1545 Woodroffe Avenue Nepean ON K2G 1W2	EHS

Order No.:	20081022045
Report Date:	10/31/2008
Report Type:	Standard Report
Search Radius (km):	0.25
Addit. Info Ordered:	Fire Insur. Maps and/or Site Plans

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	4 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE	EXP

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
				TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	
Instance ID:		77558			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		11296308			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:		FS Liquid Fuel Tank			
1	5 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP
Instance ID:		76820			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		11296299			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:		FS Liquid Fuel Tank			
1	6 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:					
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		10870852			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:					
1	7 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP
Instance ID:		48005			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		10870909			
Instance Type:		FS Piping			
Status:		EXPIRED			
Description:		FS Piping			
1	8 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS	EXP

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
				1545 WOODROFFE AV NEPEAN ON	

Instance ID: 48071
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 10870861
Instance Type: FS Piping
Status: EXPIRED
Description: FS Piping

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	9 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP

Instance ID: 77692
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 11296305
Instance Type: FS Liquid Fuel Tank
Status: EXPIRED
Description: FS Gasoline Station - Self Serve

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	10 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP

Instance ID: 47828
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 10870876
Instance Type: FS Piping
Status: EXPIRED
Description: FS Piping

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	11 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP

Instance ID: 48249
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 10870852
Instance Type: FS Liquid Fuel Tank
Status: EXPIRED
Description: FS Gasoline Station - Self Serve

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	12 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV	EXP

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
				NEPEAN ON	

Instance ID: 76753
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 11296320
Instance Type: FS Piping
Status: EXPIRED
Description: FS Piping

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	13 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP

Instance ID: 47362
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 10870900
Instance Type: FS Liquid Fuel Tank
Status: EXPIRED
Description: FS Liquid Fuel Tank

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	14 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP

Instance ID: 77091
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 11296315
Instance Type: FS Liquid Fuel Tank
Status: EXPIRED
Description: FS Liquid Fuel Tank

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	15 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP

Instance ID: 77692
TSSA Program Area:
Maximum Hazard Rank:
Instance Number: 11296305
Instance Type: FS Liquid Fuel Tank
Status: EXPIRED
Description: FS Liquid Fuel Tank

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	16 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Instance ID:		88017			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		11515507			
Instance Type:		FS Piping			
Status:		EXPIRED			
Description:		FS Piping			
1	17 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:					
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		10870917			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:					
1	18 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP
Instance ID:		48116			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		10870924			
Instance Type:		FS Piping			
Status:		EXPIRED			
Description:		FS Piping			
1	19 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:		77540			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		11296288			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:		FS Gasoline Station - Self Serve			
1	20 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:		47811			

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:	10870917				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:	FS Gasoline Station - Self Serve				
1	21 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:	47807				
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:	10870830				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:	FS Gasoline Station - Self Serve				
1	22 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:	47963				
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:	10870869				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:	FS Gasoline Station - Self Serve				
1	23 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:	47362				
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:	10870900				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:	FS Gasoline Station - Self Serve				
1	24 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:	77091				
TSSA Program Area:					

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Maximum Hazard Rank:					
Instance Number:	11296315				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:	FS Gasoline Station - Self Serve				
1	25 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:	77558				
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:	11296308				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:	FS Gasoline Station - Self Serve				
1	26 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:	76820				
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:	11296299				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:	FS Gasoline Station - Self Serve				
1	27 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:					
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:	10870830				
Instance Type:	FS Liquid Fuel Tank				
Status:	EXPIRED				
Description:					
1	28 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:	49098				
TSSA Program Area:					
Maximum Hazard Rank:					

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Instance Number:		10870885			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:		FS Gasoline Station - Self Serve			
1	29 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:					
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		10870869			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:					
1	30 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON	EXP
Instance ID:		77540			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		11296288			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:		FS Liquid Fuel Tank			
1	31 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:		76843			
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		11296282			
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:		FS Gasoline Station - Self Serve			
1	32 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	EXP
Instance ID:					
TSSA Program Area:					
Maximum Hazard Rank:					
Instance Number:		10870885			

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Instance Type:		FS Liquid Fuel Tank			
Status:		EXPIRED			
Description:					

1	**33 of 57**	**E/0.1**	**90.0**	**1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS** **1545 WOODROFFE AV** **NEPEAN ON**	**EXP**

Instance ID:	48111
TSSA Program Area:	
Maximum Hazard Rank:	
Instance Number:	10870839
Instance Type:	FS Piping
Status:	EXPIRED
Description:	FS Piping

1	**34 of 57**	**E/0.1**	**90.0**	**1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS** **1545 WOODROFFE AV** **NEPEAN ON**	**EXP**

Instance ID:	47557
TSSA Program Area:	
Maximum Hazard Rank:	
Instance Number:	10870894
Instance Type:	FS Piping
Status:	EXPIRED
Description:	FS Piping

1	**35 of 57**	**E/0.1**	**90.0**	**1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS** **1545 WOODROFFE AV** **NEPEAN ON**	**EXP**

Instance ID:	76843
TSSA Program Area:	
Maximum Hazard Rank:	
Instance Number:	11296282
Instance Type:	FS Liquid Fuel Tank
Status:	EXPIRED
Description:	FS Liquid Fuel Tank

1	**36 of 57**	**E/0.1**	**90.0**	**6161278 CANADA INC** **1545 WOODROFFE AV** **NEPEAN ON K2G 1W2**	**FST**

Instance Number:	62960861
Cont Name:	
Instance Type:	FS Liquid Fuel Tank
Fuel Type:	Gasoline
Status:	Active
Capacity:	50000

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Tank Material:	Fiberglass (FRP)
Corrosion Protection:	
Tank Type:	Double Wall UST
Install Year:	2009
Parent Facility Type:	FS Gasoline Station - Self Serve
Facility Type:	FS Liquid Fuel Tank

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	37 of 57	E/0.1	90.0	6161278 CANADA INC 1545 WOODROFFE AV NEPEAN ON K2G 1W2	FST

Instance Number:	62960862
Cont Name:	
Instance Type:	FS Liquid Fuel Tank
Fuel Type:	Diesel
Status:	Active
Capacity:	25000
Tank Material:	Fiberglass (FRP)
Corrosion Protection:	
Tank Type:	Double Wall UST
Install Year:	2009
Parent Facility Type:	FS Gasoline Station - Self Serve
Facility Type:	FS Liquid Fuel Tank

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	38 of 57	E/0.1	90.0	6161278 CANADA INC 1545 WOODROFFE AV NEPEAN ON K2G 1W2	FST

Instance Number:	62960859
Cont Name:	
Instance Type:	FS Liquid Fuel Tank
Fuel Type:	Gasoline
Status:	Active
Capacity:	50000
Tank Material:	Fiberglass (FRP)
Corrosion Protection:	
Tank Type:	Double Wall UST
Install Year:	2009
Parent Facility Type:	FS Gasoline Station - Self Serve
Facility Type:	FS Liquid Fuel Tank

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	39 of 57	E/0.1	90.0	6161278 CANADA INC 1545 WOODROFFE AV NEPEAN ON K2G 1W2	FST

Instance Number:	62960863
Cont Name:	
Instance Type:	FS Liquid Fuel Tank
Fuel Type:	Gasoline
Status:	Active
Capacity:	50000
Tank Material:	Fiberglass (FRP)
Corrosion Protection:	
Tank Type:	Double Wall UST
Install Year:	2009

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Parent Facility Type: FS Gasoline Station - Self Serve
Facility Type: FS Liquid Fuel Tank

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	40 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	FSTH

License Issue Date: 3/1/2002
Tank Status: Licensed
Tank Status As Of: August 2007
Operation Type: Retail Fuel Outlet
Facility Type: Gasoline Station - Self Serve

--- Details ---

Status: Active
Capacity (L): 13600
Year of Installation: 1981
Corrosion Protection:
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline
+
Status: Active
Capacity (L): 13600
Year of Installation: 1981
Corrosion Protection:
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline
+
Status: Active
Capacity (L): 22700
Year of Installation: 1981
Corrosion Protection:
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline
+
Status: Active
Capacity (L): 22700
Year of Installation: 1981
Corrosion Protection:
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline
+
Status: Active
Capacity (L): 22700
Year of Installation: 1981
Corrosion Protection:
Tank Fuel Type: Liquid Fuel Single Wall UST - Gasoline
+
Status: Active
Capacity (L): 22700
Year of Installation: 1981
Corrosion Protection:
Tank Fuel Type: Liquid Fuel Single Wall UST - Diesel

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	41 of 57	E/0.1	90.0	1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AV NEPEAN ON K2G 1W2	FSTH

License Issue Date: 3/1/2002
Tank Status: Licensed

Tank Status As Of:	December 2008
Operation Type:	Retail Fuel Outlet
Facility Type:	Gasoline Station - Self Serve
--- Details ---	
Status:	Active
Capacity (L):	13600
Year of Installation:	1981
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	13600
Year of Installation:	1981
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	22700
Year of Installation:	1981
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	22700
Year of Installation:	1981
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	22700
Year of Installation:	1981
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	22700
Year of Installation:	1981
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Diesel
+	
Status:	Active
Capacity (L):	22700
Year of Installation:	1986
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	22700
Year of Installation:	1986
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	22700
Year of Installation:	1986
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Capacity (L):	22700
Year of Installation:	1986
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	13600
Year of Installation:	1986
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Gasoline
+	
Status:	Active
Capacity (L):	13600
Year of Installation:	1986
Corrosion Protection:	
Tank Fuel Type:	Liquid Fuel Single Wall UST - Diesel

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	42 of 57	E/0.1	90.0	**Imperial Oil** **1545 Woodroffe Avenue** **Nepean ON K2G 1W2**	GEN

Generator #:	ON7721580
Approval Yrs:	As of April 2014
SIC Code:	
SIC Description:	

--- Details ---

Waste Code:	221
Waste Description:	Light fuels
+	
Waste Code:	252
Waste Description:	Waste crankcase oils and lubricants
+	
Waste Code:	251
Waste Description:	Waste oils/sludges (petroleum based)

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	43 of 57	E/0.1	90.0	**Imperial Oil** **1545 Woodroffe Avenue** **Nepean ON**	GEN

Generator #:	ON7721580
Approval Yrs:	2013
SIC Code:	447190
SIC Description:	

--- Details ---

Waste Code:	221
Waste Description:	LIGHT FUELS
+	
Waste Code:	252
Waste Description:	WASTE OILS & LUBRICANTS
+	
Waste Code:	251
Waste Description:	OIL SKIMMINGS & SLUDGES

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	44 of 57	E/0.1	90.0	**Imperial Oil** **1545 Woodroffe Avenue** **Nepean ON**	GEN

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Generator #: ON7721580
Approval Yrs: 2009
SIC Code: 447190
SIC Description: Other Gasoline Stations

--- Details ---
Waste Code: 221
Waste Description: LIGHT FUELS
+
Waste Code: 251
Waste Description: OIL SKIMMINGS & SLUDGES

1	45 of 57	E/0.1	90.0	**Imperial Oil** **1545 Woodroffe Avenue** **Nepean ON**	GEN

Generator #: ON7721580
Approval Yrs: 2011
SIC Code: 447190
SIC Description: Other Gasoline Stations

--- Details ---
Waste Code: 221
Waste Description: LIGHT FUELS
+
Waste Code: 251
Waste Description: OIL SKIMMINGS & SLUDGES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

1	46 of 57	E/0.1	90.0	**Imperial Oil** **1545 Woodroffe Avenue** **Nepean ON**	GEN

Generator #: ON7721580
Approval Yrs: 2010
SIC Code: 447190
SIC Description: Other Gasoline Stations

--- Details ---
Waste Code: 221
Waste Description: LIGHT FUELS
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS
+
Waste Code: 251
Waste Description: OIL SKIMMINGS & SLUDGES

1	47 of 57	E/0.1	90.0	**Imperial Oil** **1545 Woodroffe Avenue** **Nepean ON**	GEN

Generator #: ON7721580
Approval Yrs: 2012
SIC Code: 447190

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

SIC Description: Other Gasoline Stations

--- Details ---

Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS
+
Waste Code: 221
Waste Description: LIGHT FUELS
+
Waste Code: 251
Waste Description: OIL SKIMMINGS & SLUDGES

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	48 of 57	E/0.1	90.0	1545 WOODROFFE AVENUE NEPEAN ON K2G 1W2	HINC

External File Num: FS INC 0812-07778
Date of Occurrence: 12/12/2008
Fuel Occurrence Type: Discovery of a Petroleum Product
Fuel Type Involved: Gasoline
Status Desc: Completed - No Action Required
Job Type Desc: Incident/Near-Miss Occurrence (FS)
Oper. Type Involved: Retail Fuel Station (FS, SS, Multifunctional)
Service Interruptions: No
Property Damage: No
Fuel Life Cycle Stage: Storage and Dispensing
Root Cause:
Reported Details: Imperial Oil
Fuel Category: Liquid Fuel
Occurrence Type: Incident
Affiliation: Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)
County Name: Ottawa
Approx. Quant. Rel:
Nearby body of water:
Enter Drainage Syst.:
Approx. Quant. Unit:
Environmental Impact:

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	49 of 57	E/0.1	90.0	1070427 ONTARIO LTD O/A WOODROFFE ESSO 1545 WOODRUFFE AV NEPEAN ON K2G1W2	PRT

Location ID: 9653
Type: retail
Expiry Date: 1995-09-30
Capacity (L): 118000
Licence #: 0076426758

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	50 of 57	E/0.1	90.0	ESSO GAS STATION 1545 WOODROFFE AVE NEPEAN ON K2G1W2	RST

Facility: SERVICE STATIONS GASOLINE OIL & NATURAL
Description:

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	51 of 57	E/0.1	90.0	ESSO TIGER EXPRESS 1545 WOODROFFE AVE NEPEAN ON K2G1W2	RST

Facility: Service Stations-Gasoline, Oil & Natural Gas
Description:

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	52 of 57	E/0.1	90.0	ESSO 1545 WOODROFFE AVE NEPEAN ON K2G 1W2	RST

Facility: Service Stations-Gasoline, Oil & Natural Gas
Description:

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	53 of 57	E/0.1	90.0	ESSO GAS STATION 1545 WOODROFFE AVE NEPEAN ON K2G 1W2	RST

Facility: SERVICE STATIONS-GASOLINE, OIL & NATURAL GAS
Description:

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	54 of 57	E/0.1	90.0	QUEENSWAY TANK LINES 1545 WOODROFFE AVE ESSO SERVICE STATION. TANK TRUCK (CARGO) NEPEAN CITY ON K2G 1W2	SPL

Ref No.: 87899
Incident Dt: 7/3/1993
MOE Reported Dt: 7/3/1993
Contaminant Name:
Contaminant Quantity:
Incident Summary: QUEENSWAY TANK LINES- 4L GASOLINE TO PAVEMENT AT SERVICE STAT., CLEANED UP
Incident Cause: PIPE/HOSE LEAK
Incident Reason: ERROR
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	55 of 57	E/0.1	90.0	1545 Woodroffe Avenue, Nepean Ottawa ON	SPL

Ref No.: 2153-7M9S5K
Incident Dt:
MOE Reported Dt: 12/12/2008
Contaminant Name: GASOLINE
Contaminant Quantity:
Incident Summary: TSSA - Leak of gasoline from underground tank to groundwater
Incident Cause: Tank (Underground) Leak
Incident Reason: Unknown - Reason not determined
Nature of Impact: Groundwater Pollution
Receiving Medium:
Environmental Impact: Not Anticipated

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	56 of 57	E/0.1	90.0	Imperial Oil Limited 1545 Woodroffe Ave Ottawa ON	SPL

Ref No.:	8523-8KZNNG
Incident Dt:	6/27/2011
MOE Reported Dt:	8/23/2011
Contaminant Name:	GASOLINE
Contaminant Quantity:	0.25 L
Incident Summary:	Imperial Oil: gasoline into groundwater wells, clnd
Incident Cause:	Other Discharges
Incident Reason:	Spill
Nature of Impact:	Groundwater Pollution
Receiving Medium:	
Environmental Impact:	Not Anticipated

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
1	57 of 57	E/0.1	90.0	NEPEAN ON	WWIS

Well ID:	7129173	Lot:	
Concession:		Concession Name:	
County:	OTTAWA-CARLETON	Municipality:	OTTAWA CITY
Easting Nad83:	441093	Northing Nad83:	5020362
Zone:	18	Utm Reliability:	margin of error : 30 m - 100 m
Primary Water Use:		Construction Date:	08-MAY-09
Sec. Water Use:		Well Depth:	
Pump Rate:		Static Water Level:	
Flow Rate:		Clear/Cloudy:	
Specific Capacity:		Final Well Status:	Abandoned-Other
Construction Method:		Flowing (y/n):	
Elevation (m):	87.77	Elevation Reliability:	
Depth to Bedrock:		Overburden/Bedrock:	
Water Type:		Casing Material:	

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
2	1 of 1	WSW/46.9	89.2	ON	BORE

Borehole ID:	800227	Type:	Borehole
Use:	Geotechnical/Geological Investigation	Status:	
Drill Method:	Boring	UTM Zone:	18
Easting:	441023.52	Northing:	5020436.68
Location Accuracy:		Orig. Ground Elev m:	88.4
Elev. Reliability Note:		DEM Ground Elev m:	87.1
Total Depth m:	11.3	Primary Name:	B.H.207
Township:		Concession:	
Lot:		Municipality:	
Completion Date:		Static Water Level:	2.6
Primary Water Use:		Sec. Water Use:	

--- Details ---

Stratum ID:	218564136	**Top Depth(m):**	0.0
Bottom Depth(m):	0.2	**Stratum Desc:**	Fill-Misc Sand - Gravel
+			
Stratum ID:	218564137	**Top Depth(m):**	0.2
Bottom Depth(m):	1.2	**Stratum Desc:**	Brown Fill-Misc Sand With: Cl W Gr
+			
Stratum ID:	218564138	**Top Depth(m):**	1.2
Bottom Depth(m):	1.6	**Stratum Desc:**	Dark Brown Silt Organic Silt
+			
Stratum ID:	218564139	**Top Depth(m):**	1.6
Bottom Depth(m):	2.1	**Stratum Desc:**	Grey Compact Sand
+			
Stratum ID:	218564140	**Top Depth(m):**	2.1
Bottom Depth(m):	4.5	**Stratum Desc:**	Grey Soft to Firm Silty Clay
+			
Stratum ID:	218564141	**Top Depth(m):**	4.5
Bottom Depth(m):	11.3	**Stratum Desc:**	Grey Compact Sand With: Gr

3 | **1 of 1** | **SE/55.2** | **90.0** | **lot 30 con 1 ON** | **WWIS**

Well ID:	7176824	**Lot:**	030
Concession:	01	**Concession Name:**	RF
County:	OTTAWA-CARLETON	**Municipality:**	NEPEAN TOWNSHIP
Easting Nad83:	441100	**Northing Nad83:**	5020412
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:		**Construction Date:**	06-OCT-11
Sec. Water Use:		**Well Depth:**	
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	
Construction Method:		**Flowing (y/n):**	
Elevation (m):		**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	

4 | **1 of 1** | **SSW/67.9** | **89.0** | **ON** | **BORE**

Borehole ID:	801196	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Hollow stem auger	**UTM Zone:**	18
Easting:	441048.31	**Northing:**	5020390.23
Location Accuracy:		**Orig. Ground Elev m:**	88.5
Elev. Reliability Note:		**DEM Ground Elev m:**	87.4
Total Depth m:	5.5	**Primary Name:**	BH 76-4
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	10-FEB-1976	**Static Water Level:**	-999.9

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Primary Water Use:		**Sec. Water Use:**	
--- Details ---			
Stratum ID:	218567183	**Top Depth(m):**	0.0
Bottom Depth(m):	1.4	**Stratum Desc:**	Brown Fill-Misc Sand - Gravel With: Cob FROZEN
+			
Stratum ID:	218567184	**Top Depth(m):**	1.4
Bottom Depth(m):	1.5	**Stratum Desc:**	Dark Brown Peat Trace: Sa Tr Gr FROZEN
+			
Stratum ID:	218567185	**Top Depth(m):**	1.5
Bottom Depth(m):	2.7	**Stratum Desc:**	Brown Compact Silt - Sand
+			
Stratum ID:	218567186	**Top Depth(m):**	2.7
Bottom Depth(m):	5.5	**Stratum Desc:**	Grey Soft to Firm Silty Clay Occasional: Sa

---

5 **1 of 1** **SW/72.2** **89.0** **WWIS**

OTTAWA ON

Well ID:	7150709	**Lot:**	
Concession:		**Concession Name:**	
County:	OTTAWA-CARLETON	**Municipality:**	OTTAWA CITY
Easting Nad83:	441014	**Northing Nad83:**	5020406
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	21-JUL-10
Sec. Water Use:		**Well Depth:**	6 ft
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	Test Hole
Construction Method:	Other Method	**Flowing (y/n):**	
Elevation (m):	87.51	**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated
--- Details ---			
Thickness:	GREY	**Original Depth:**	.8 ft
Material Colour:	CEMENTED	**Material:**	.8 ft
+			
Thickness:	BROWN	**Original Depth:**	1.2 ft
Material Colour:	SAND, GRAVEL, LOOSE	**Material:**	.4 ft
+			
Thickness:	GREY	**Original Depth:**	3.6 ft
Material Colour:	CLAY, SILT, SAND	**Material:**	2.4 ft
+			
Thickness:	GREY	**Original Depth:**	4.8 ft
Material Colour:	SILT, CLAY, SAND	**Material:**	1.2 ft
+			
Thickness:	GREY	**Original Depth:**	6 ft
Material Colour:	SAND, SILT, CLAY	**Material:**	1.2 ft

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
6	1 of 1	SSE/80.1	90.0	Ottawa ON	WWIS

Well ID:	7146132	**Lot:**	
Concession:		**Concession Name:**	
County:	OTTAWA-CARLETON	**Municipality:**	OTTAWA CITY
Easting Nad83:	441112	**Northing Nad83:**	5020391
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	02-MAR-10
Sec. Water Use:		**Well Depth:**	6.1 m
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	Test Hole
Construction Method:	H.S.A.	**Flowing (y/n):**	
Elevation (m):	88.13	**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated

--- Details ---

Thickness:		**Original Depth:**	.2 m
Material Colour:		**Material:**	.2 m
+			
Thickness:	RED	**Original Depth:**	1.3 m
Material Colour:	FILL, GRAVEL, COARSE-GRAINED	**Material:**	1.1 m
+			
Thickness:	BLACK	**Original Depth:**	2.3 m
Material Colour:	PEAT	**Material:**	1 m
+			
Thickness:	GREY	**Original Depth:**	5 m
Material Colour:	SILT, CLAYEY, SAND	**Material:**	2.7 m
+			
Thickness:	GREY	**Original Depth:**	6.1 m
Material Colour:	SAND	**Material:**	1.1 m

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
7	1 of 1	S/82.8	89.0	Ottawa ON	WWIS

Well ID:	7191214	**Lot:**	
Concession:		**Concession Name:**	
County:	OTTAWA-CARLETON	**Municipality:**	NEPEAN TOWNSHIP
Easting Nad83:	441066	**Northing Nad83:**	5020373
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	31-MAY-12
Sec. Water Use:		**Well Depth:**	5.2 m
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	
Construction Method:	Auger	**Flowing (y/n):**	
Elevation (m):		**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedroc**	

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Water Type:		**k:** **Casing Material:**	Not stated
--- Details ---			
Thickness:	GREY	**Original Depth:**	.2 m
Material Colour:	FILL	**Material:**	.2 m
+			
Thickness:	GREY	**Original Depth:**	1 m
Material Colour:	GRAVEL, STONES, SAND	**Material:**	.8 m
+			
Thickness:	GREY	**Original Depth:**	5 m
Material Colour:	SILT, SAND, CLAYEY	**Material:**	4 m
+			
Thickness:	GREY	**Original Depth:**	5.2 m
Material Colour:	SAND, SILT, GRAVEL	**Material:**	.2 m

8 **1 of 1** **SSE/91.5** **90.0** **WWIS**

Ottawa ON

Well ID:	7122580	**Lot:**	
Concession:		**Concession Name:**	
County:	OTTAWA-CARLETON	**Municipality:**	OTTAWA CITY
Easting Nad83:	441110	**Northing Nad83:**	5020382
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	18-NOV-08
Sec. Water Use:		**Well Depth:**	6.1 m
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	Test Hole
Construction Method:	H.S.A.	**Flowing (y/n):**	
Elevation (m):	88.04	**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated
--- Details ---			
Thickness:	BLACK	**Original Depth:**	.3 m
Material Colour:	OTHER	**Material:**	.3 m
+			
Thickness:	BROWN	**Original Depth:**	1 m
Material Colour:	SAND	**Material:**	.7 m
+			
Thickness:	GREY	**Original Depth:**	4.5 m
Material Colour:	CLAY, SILT	**Material:**	3.5 m
+			
Thickness:	BROWN	**Original Depth:**	6.1 m
Material Colour:	SAND	**Material:**	1.6 m

9 **1 of 1** **S/95.8** **89.0** **WWIS**

Ottawa ON

Well ID:	7191212	**Lot:**	

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Concession:		**Concession Name:**	
County:	OTTAWA-CARLETON	**Municipality:**	NEPEAN TOWNSHIP
Easting Nad83:	441069	**Northing Nad83:**	5020360
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	31-MAY-12
Sec. Water Use:		**Well Depth:**	6.1 m
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	
Construction Method:	Auger	**Flowing (y/n):**	
Elevation (m):		**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated

--- Details ---

Thickness:	GREY	**Original Depth:**	.5 m
Material Colour:	GRAVEL, FILL, SAND	**Material:**	.5 m
+			
Thickness:	YELLOW	**Original Depth:**	1.5 m
Material Colour:	SAND, FILL, SILT	**Material:**	1 m
+			
Thickness:	GREY	**Original Depth:**	4.1 m
Material Colour:	SILT, SAND, CLAY	**Material:**	2.6 m
+			
Thickness:	GREY	**Original Depth:**	6.1 m
Material Colour:	SAND, SILT, LIGHT-COLOURED	**Material:**	2 m

---

10	***1 of 8***	***ESE/100.2***	***90.0***	***CARLING REALTY COMPANY LIMITED 72G Brockington Cres. OTTAWA ON***	***GEN***

Generator #:	ON3971729
Approval Yrs:	2013
SIC Code:	531111
SIC Description:	LESSORS OF RESIDENTIAL BUILDINGS AND DWELLINGS (EXCEPT SOCIAL HOUSING PROJECTS)

--- Details ---

Waste Code:	221
Waste Description:	LIGHT FUELS
+	
Waste Code:	252
Waste Description:	WASTE OILS & LUBRICANTS
+	
Waste Code:	145
Waste Description:	PAINT/PIGMENT/COATING RESIDUES

10	***2 of 8***	***ESE/100.2***	***90.0***	***CARLING REALTY COMPANY LIMITED 72G Brockington Cres. OTTAWA ON***	***GEN***

Generator #:	ON3971729
Approval Yrs:	2011

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

SIC Code: 531111
SIC Description: Lessors of Residential Buildings and Dwellings (except Social Housing Projects)

--- Details ---
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS
+
Waste Code: 145
Waste Description: PAINT/PIGMENT/COATING RESIDUES

---

10 **3 of 8** **ESE/100.2** **90.0** **CARLING REALTY COMPANY LIMITED** **GEN**
72G Brockington Cres.
OTTAWA ON K2G 5L1

Generator #: ON3971729
Approval Yrs: 05,06,07,08
SIC Code: 531111
SIC Description: Lessors of Residential Buildings and Dwellings (except Social Housing Projects)

--- Details ---
Waste Code: 145
Waste Description: PAINT/PIGMENT/COATING RESIDUES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS
+
Waste Code: 212
Waste Description: ALIPHATIC SOLVENTS

---

10 **4 of 8** **ESE/100.2** **90.0** **CARLING REALTY COMPANY LIMITED** **GEN**
72G Brockington Cres.
OTTAWA ON

Generator #: ON3971729
Approval Yrs: 2009
SIC Code: 531111
SIC Description: Lessors of Residential Buildings and Dwellings (except Social Housing Projects)

--- Details ---
Waste Code: 145
Waste Description: PAINT/PIGMENT/COATING RESIDUES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

---

10 **5 of 8** **ESE/100.2** **90.0** **CARLING REALTY COMPANY LIMITED** **GEN**
72G Brockington Cres.
OTTAWA ON K2G 5L1

Generator #: ON3971729
Approval Yrs: As of April 2014
SIC Code:
SIC Description:

--- Details ---
Waste Code: 221
Waste Description: Light fuels
+

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Waste Code: 145
Waste Description: Wastes from the use of pigments, coatings and paints

---

10 **6 of 8** **ESE/100.2** **90.0** **CARLING REALTY COMPANY LIMITED** **GEN**
72G Brockington Cres.
OTTAWA ON K2G 5L1

Generator #: ON3971729
Approval Yrs: 2012
SIC Code: 531111
SIC Description: Lessors of Residential Buildings and Dwellings (except Social Housing Projects)

--- Details ---
Waste Code: 145
Waste Description: PAINT/PIGMENT/COATING RESIDUES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

---

10 **7 of 8** **ESE/100.2** **90.0** **CARLING REALTY COMPANY LIMITED** **GEN**
72G Brockington Cres.
OTTAWA ON

Generator #: ON3971729
Approval Yrs: 2010
SIC Code: 531111
SIC Description: Lessors of Residential Buildings and Dwellings (except Social Housing Projects)

--- Details ---
Waste Code: 145
Waste Description: PAINT/PIGMENT/COATING RESIDUES
+
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

---

10 **8 of 8** **ESE/100.2** **90.0** **72A BROCKINGTON CRESCENT** **HINC**
NEPEAN ON K2G 5L1

External File Num: FS INC 0810-06402
Date of Occurrence: 10/24/2008
Fuel Occurrence Type: CO Release
Fuel Type Involved: Natural Gas
Status Desc: Completed - Causal Analysis(End)
Job Type Desc: Incident/Near-Miss Occurrence (FS)
Oper. Type Involved: Private Dwelling
Service Interruptions: No
Property Damage: No
Fuel Life Cycle Stage: Utilization
Root Cause: Root Cause: Equipment/Material/Component:Yes Procedures:Yes Maintenance:Yes Design:No Training:No Management:No Human Factors:Yes

Reported Details:
Fuel Category: Gaseous Fuel
Occurrence Type: Incident
Affiliation: Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)
County Name: Ottawa
Approx. Quant. Rel:
Nearby body of water:
Enter Drainage Syst.:

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Approx. Quant. Unit:
Environmental Impact:

---

11 ***1 of 1*** ***SE/108.0*** ***90.0*** ***WWIS***

Ottawa ON

Well ID:	7191213	***Lot:***	
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	NEPEAN TOWNSHIP
Easting Nad83:	441138	***Northing Nad83:***	5020375
Zone:	18	***Utm Reliability:***	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	***Construction Date:***	31-MAY-12
Sec. Water Use:		***Well Depth:***	5.1 m
Pump Rate:		***Static Water Level:***	
Flow Rate:		***Clear/Cloudy:***	
Specific Capacity:		***Final Well Status:***	Observation Wells
Construction Method:	Auger	***Flowing (y/n):***	
Elevation (m):		***Elevation Reliability:***	
Depth to Bedrock:		***Overburden/Bedrock:***	
Water Type:		***Casing Material:***	Not stated

--- Details ---

Thickness:		***Original Depth:***	.2 m
Material Colour:		***Material:***	.2 m
+			
Thickness:	GREY	***Original Depth:***	.4 m
Material Colour:	GRAVEL, SAND, FILL	***Material:***	.2 m
+			
Thickness:	YELLOW	***Original Depth:***	2.1 m
Material Colour:	SAND, GRAVEL, SILT	***Material:***	1.7 m
+			
Thickness:	GREY	***Original Depth:***	5.1 m
Material Colour:	SILT, SAND, CLAY	***Material:***	3 m
+			
Thickness:	GREY	***Original Depth:***	m
Material Colour:	SAND, GRAVEL, SILT	***Material:***	m

---

12 ***1 of 1*** ***SSW/108.1*** ***89.0*** ***WWIS***

Ottawa ON

Well ID:	7141308	***Lot:***	
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	OTTAWA CITY
Easting Nad83:	441036	***Northing Nad83:***	5020352
Zone:	18	***Utm Reliability:***	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	***Construction Date:***	17-FEB-10
Sec. Water Use:		***Well Depth:***	7.3 ft
Pump Rate:		***Static Water Level:***	
Flow Rate:		***Clear/Cloudy:***	
Specific Capacity:		***Final Well Status:***	Observation Wells
Construction Method:	Other Method	***Flowing (y/n):***	

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Elevation (m):	87.49	**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated
--- Details ---			
Thickness:	BROWN	**Original Depth:**	4.2 ft
Material Colour:	CLAY, , SANDY	**Material:**	4.2 ft
+			
Thickness:	BROWN	**Original Depth:**	7.3 ft
Material Colour:	SAND	**Material:**	3.1 ft

13	1 of 1	SSE/118.3	89.5	lot 30 con 1 Ottawa ON	WWIS

Well ID:	7146133	**Lot:**	030
Concession:	01	**Concession Name:**	RF
County:	OTTAWA-CARLETON	**Municipality:**	NEPEAN TOWNSHIP
Easting Nad83:	441108	**Northing Nad83:**	5020345
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	01-MAR-10
Sec. Water Use:		**Well Depth:**	6.7 m
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	Test Hole
Construction Method:	H.S.A.	**Flowing (y/n):**	
Elevation (m):	87.77	**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated
--- Details ---			
Thickness:		**Original Depth:**	.1 m
Material Colour:		**Material:**	.1 m
+			
Thickness:	GREY	**Original Depth:**	.5 m
Material Colour:	GRAVEL, FILL, COARSE-GRAINED	**Material:**	.4 m
+			
Thickness:	BROWN	**Original Depth:**	.8 m
Material Colour:	SAND, FILL, MEDIUM-GRAINED	**Material:**	.3 m
+			
Thickness:	GREY	**Original Depth:**	3 m
Material Colour:	SILT, SAND, FINE-GRAINED	**Material:**	2.2 m
+			
Thickness:	GREY	**Original Depth:**	3.5 m
Material Colour:	CLAY	**Material:**	.5 m
+			
Thickness:		**Original Depth:**	6.7 m
Material Colour:	SAND	**Material:**	3.2 m

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
14	1 of 1	SSW/118.8	89.0	Ottawa ON	WWIS

Well ID:	7145546	**Lot:**	
Concession:		**Concession Name:**	
County:	OTTAWA-CARLETON	**Municipality:**	OTTAWA CITY
Easting Nad83:	441034	**Northing Nad83:**	5020347
Zone:	18	**Utm Reliability:**	margin of error : 30 m - 100 m
Primary Water Use:	Monitoring	**Construction Date:**	12-APR-10
Sec. Water Use:		**Well Depth:**	7.6 m
Pump Rate:		**Static Water Level:**	4.7 m
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	Test Hole
Construction Method:	H.S.A.	**Flowing (y/n):**	
Elevation (m):	87.64	**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated

--- Details ---

Thickness:	BROWN	**Original Depth:**	1 m
Material Colour:	TOPSOIL, SAND, SILT	**Material:**	1 m
+			
Thickness:	BROWN	**Original Depth:**	2.5 m
Material Colour:	SAND, SILTY, GRAVEL	**Material:**	1.5 m
+			
Thickness:	GREY	**Original Depth:**	4 m
Material Colour:	CLAY, SILTY, FINE-GRAINED	**Material:**	1.5 m
+			
Thickness:	BROWN	**Original Depth:**	7.6 m
Material Colour:	SAND, COARSE-GRAINED	**Material:**	3.6 m

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
15	1 of 1	NW/132.6	89.0	ON	BORE

Borehole ID:	612379	**Type:**	Borehole
Use:		**Status:**	
Drill Method:		**UTM Zone:**	18
Easting:	440966	**Northing:**	5020542
Location Accuracy:		**Orig. Ground Elev m:**	88.4
Elev. Reliability Note:		**DEM Ground Elev m:**	87
Total Depth m:	11.3	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	SEP-1971	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218391060	**Top Depth(m):**	0.0
Bottom Depth(m):	0.2	**Stratum Desc:**	ARTIFICIAL,SAND, GRAVEL.
+			
Stratum ID:	218391061	**Top Depth(m):**	0.2

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Bottom Depth(m):	1.2	**Stratum Desc:**	ARTIFICIAL,SAND, GRAVEL,CLAY. BROWN.
+			
Stratum ID:	218391062	**Top Depth(m):**	1.2
Bottom Depth(m):	1.6	**Stratum Desc:**	ORGANIC,SILT. DARK,BROWN.
+			
Stratum ID:	218391063	**Top Depth(m):**	1.6
Bottom Depth(m):	2.1	**Stratum Desc:**	SAND-FINE TO MEDIUM.GREY,COMPACT.
+			
Stratum ID:	218391064	**Top Depth(m):**	2.1
Bottom Depth(m):	4.5	**Stratum Desc:**	CLAY,SILT. GREY,SOFT,FIRM.
+			
Stratum ID:	218391065	**Top Depth(m):**	4.5
Bottom Depth(m):	11.3	**Stratum Desc:**	SAND,GRAVEL-FINE TO COARSE. GREY,COMPACT. 0005201300069001001490210 14Y,BROWN,COMPACT. 00060

---

16 | **1 of 1** | **SSE/134.9** | **89.0** | **WWIS**

Ottawa ON

Well ID:	7158263	**Lot:**	
Concession:		**Concession Name:**	
County:	OTTAWA-CARLETON	**Municipality:**	NEPEAN TOWNSHIP
Easting Nad83:	441105	**Northing Nad83:**	5020328
Zone:	18	**Utm Reliability:**	margin of error : 10 - 30 m
Primary Water Use:	Monitoring	**Construction Date:**	12-NOV-10
Sec. Water Use:		**Well Depth:**	1.8 m
Pump Rate:		**Static Water Level:**	
Flow Rate:		**Clear/Cloudy:**	
Specific Capacity:		**Final Well Status:**	Test Hole
Construction Method:		**Flowing (y/n):**	
Elevation (m):		**Elevation Reliability:**	
Depth to Bedrock:		**Overburden/Bedrock:**	
Water Type:		**Casing Material:**	Not stated

--- Details ---

Thickness:		**Original Depth:**	.3 m
Material Colour:		**Material:**	.3 m
+			
Thickness:	GREY	**Original Depth:**	.4 m
Material Colour:	GRAVEL	**Material:**	.1 m
+			
Thickness:	GREY	**Original Depth:**	1.8 m
Material Colour:	SILT, SAND, GRAVEL	**Material:**	1.4 m

---

17 | **1 of 1** | **S/146.1** | **89.0** | **SPL**

PUC
WOODROFFE AVE AT KNOXDALE MOTOR VEHICLE (OPERATING FLUID)
OTTAWA CITY ON

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Ref No.:	32139
Incident Dt:	3/15/1990
MOE Reported Dt:	3/16/1990
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	REG. MUNCIPALITY OTTAWA - 100 LTR OF HYDRAULIC OIL TO ROAD.
Incident Cause:	PIPE/HOSE LEAK
Incident Reason:	EQUIPMENT FAILURE
Nature of Impact:	Soil contamination
Receiving Medium:	LAND
Environmental Impact:	POSSIBLE

---

18 **1 of 1** **S/151.9** **89.0** **ON** **BORE**

Borehole ID:	808476	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Boring	**UTM Zone:**	18
Easting:	441067.89	**Northing:**	5020303.87
Location Accuracy:		**Orig. Ground Elev m:**	290
Elev. Reliability Note:		**DEM Ground Elev m:**	87.4
Total Depth m:	37	**Primary Name:**	BH 1
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	06-AUG-1968	**Static Water Level:**	9.4
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218596492	**Top Depth(m):**	0.0
Bottom Depth(m):	9.7	**Stratum Desc:**	Brown Compact to Dense Fill-Misc Sand - Gravel With: Cl W Constr Debris
+			
Stratum ID:	218596493	**Top Depth(m):**	9.7
Bottom Depth(m):	13.0	**Stratum Desc:**	Grey Soft Silty Clay With: Org M
+			
Stratum ID:	218596494	**Top Depth(m):**	13.0
Bottom Depth(m):	28.5	**Stratum Desc:**	Grey Compact Sand Trace: Gr
+			
Stratum ID:	218596495	**Top Depth(m):**	28.5
Bottom Depth(m):	37.0	**Stratum Desc:**	Grey Compact Sand With: Gr

---

19 **1 of 1** **SSE/157.3** **89.5** **ON** **BORE**

Borehole ID:	612368	**Type:**	Borehole
Use:		**Status:**	
Drill Method:		**UTM Zone:**	18
Easting:	441131	**Northing:**	5020312
Location Accuracy:		**Orig. Ground Elev m:**	88.9
Elev. Reliability Note:		**DEM Ground Elev m:**	87.9
Total Depth m:	11.3	**Primary Name:**	

Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	SEP-1971	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218391017	**Top Depth(m):**	0.0
Bottom Depth(m):	0.1	**Stratum Desc:**	ARTIFICIAL,SAND, GRAVEL.
+			
Stratum ID:	218391018	**Top Depth(m):**	0.1
Bottom Depth(m):	1.4	**Stratum Desc:**	ARTIFICIAL,CLAY,SILT,SAND. BROWN.
+			
Stratum ID:	218391019	**Top Depth(m):**	1.4
Bottom Depth(m):	1.8	**Stratum Desc:**	ORGANIC,SILT. DARK,BROWN.
+			
Stratum ID:	218391020	**Top Depth(m):**	1.8
Bottom Depth(m):	2.3	**Stratum Desc:**	CLAY,SILT. VERY STIFF,WEATHERED.
+			
Stratum ID:	218391021	**Top Depth(m):**	2.3
Bottom Depth(m):	4.4	**Stratum Desc:**	SAND,GRAVEL-FINE TO COARSE. BROWN,COMPACT.
+			
Stratum ID:	218391022	**Top Depth(m):**	4.4
Bottom Depth(m):	6.1	**Stratum Desc:**	SAND,SILT-FINE. GREY,COMPACT.
+			
Stratum ID:	218391023	**Top Depth(m):**	6.1
Bottom Depth(m):	11.3	**Stratum Desc:**	SAND,GRAVEL-FINE TO COARSE. GREY,BROWN,COMPACT. 00060003000750150014502700200242675 00010

---

20 **1 of 1** **NNE/200.4** **90.0** **ON** **BORE**

Borehole ID:	801639	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Boring	**UTM Zone:**	18
Easting:	441136.24	**Northing:**	5020643.56
Location Accuracy:		**Orig. Ground Elev m:**	89.3
Elev. Reliability Note:		**DEM Ground Elev m:**	91.1
Total Depth m:	15.7	**Primary Name:**	BH 1
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	24-OCT-1972	**Static Water Level:**	7.7
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218568920	**Top Depth(m):**	0.0
Bottom Depth(m):	6.1	**Stratum Desc:**	Brown to Grey Very Dense Sand With: Si Trace: Gr
+			

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Stratum ID:	218568921	**Top Depth(m):**	6.1
Bottom Depth(m):	10.4	**Stratum Desc:**	Grey Dense to Very Dense Sand Trace: Si
+			
Stratum ID:	218568922	**Top Depth(m):**	10.4
Bottom Depth(m):	11.6	**Stratum Desc:**	Grey Very Dense Silt - Sand
+			
Stratum ID:	218568923	**Top Depth(m):**	11.6
Bottom Depth(m):	13.1	**Stratum Desc:**	Grey Very Dense Sand With: Gr Trace: Si
+			
Stratum ID:	218568924	**Top Depth(m):**	13.1
Bottom Depth(m):	15.7	**Stratum Desc:**	Grey Very Dense Silt - Sand With: Gr

---

21 **1 of 1** **NW/202.2** **89.0** **ON** **BORE**

Borehole ID:	801210	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Hollow stem auger	**UTM Zone:**	18
Easting:	440929.19	**Northing:**	5020604.42
Location Accuracy:		**Orig. Ground Elev m:**	88.1
Elev. Reliability Note:		**DEM Ground Elev m:**	85.4
Total Depth m:	10.7	**Primary Name:**	BH 76-7
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	21-OCT-1976	**Static Water Level:**	5.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218567249	**Top Depth(m):**	0.0
Bottom Depth(m):	2.7	**Stratum Desc:**	Brown Compact Fill-Misc Sand - Gravel With: Si
+			
Stratum ID:	218567250	**Top Depth(m):**	2.7
Bottom Depth(m):	9.6	**Stratum Desc:**	Grey Firm Silty Clay With: F Sa
+			
Stratum ID:	218567251	**Top Depth(m):**	9.6
Bottom Depth(m):	10.7	**Stratum Desc:**	Grey Compact Sand

---

22 **1 of 1** **N/206.4** **90.0** **ON** **BORE**

Borehole ID:	612386	**Type:**	Borehole
Use:		**Status:**	
Drill Method:		**UTM Zone:**	18
Easting:	441071	**Northing:**	5020662
Location Accuracy:		**Orig. Ground Elev m:**	89.3
Elev. Reliability Note:		**DEM Ground Elev m:**	89.7
Total Depth m:	15.7	**Primary Name:**	
Township:		**Concession:**	

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Lot:		**Municipality:**	
Completion Date:	OCT-1972	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218391090	**Top Depth(m):**	0.0
Bottom Depth(m):	6.1	**Stratum Desc:**	SAND,SILT-FINE, GRAVEL. BROWN,GREY,VERY DENSE.
+			
Stratum ID:	218391091	**Top Depth(m):**	6.1
Bottom Depth(m):	10.4	**Stratum Desc:**	SAND,SILT-FINE TO MEDIUM. GREY,DENSE TO VERY DENSE.
+			
Stratum ID:	218391092	**Top Depth(m):**	10.4
Bottom Depth(m):	11.6	**Stratum Desc:**	SAND,SILT-FINE. GREY,VERY DENSE.
+			
Stratum ID:	218391093	**Top Depth(m):**	11.6
Bottom Depth(m):	13.1	**Stratum Desc:**	SAND,GRAVEL-FINE TO COARSE,SILT. GREY,VERY DENSE.
+			
Stratum ID:	218391094	**Top Depth(m):**	13.1
Bottom Depth(m):	15.7	**Stratum Desc:**	SAND,SILT,GRAVEL. GREY,VERY DENSE. 00000073002000510034005300380070 00430100001450270020002426

23	1 of 1	S/208.4	89.0	ON	BORE

Borehole ID:	806846	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Not known	**UTM Zone:**	18
Easting:	441083.25	**Northing:**	5020248.09
Location Accuracy:		**Orig. Ground Elev m:**	88.5
Elev. Reliability Note:		**DEM Ground Elev m:**	87.9
Total Depth m:	1.5	**Primary Name:**	AH99-1
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	07-JUL-1999	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218590369	**Top Depth(m):**	0.0
Bottom Depth(m):	0.1	**Stratum Desc:**	Asphalt
+			
Stratum ID:	218590370	**Top Depth(m):**	0.1
Bottom Depth(m):	0.4	**Stratum Desc:**	Grey Crushed Stone
+			
Stratum ID:	218590371	**Top Depth(m):**	0.4
Bottom Depth(m):	1.5	**Stratum Desc:**	Light Brown Subbase Sand

---

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
24	1 of 1	NNW/215.9	89.0	ON	BORE

Borehole ID:	801191	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Hollow stem auger	**UTM Zone:**	18
Easting:	440957.8	**Northing:**	5020642.38
Location Accuracy:		**Orig. Ground Elev m:**	89
Elev. Reliability Note:		**DEM Ground Elev m:**	85.8
Total Depth m:	23	**Primary Name:**	BH 2
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	09-DEC-1976	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218567155	**Top Depth(m):**	0.0
Bottom Depth(m):	2.4	**Stratum Desc:**	Brown Loose Fill-Misc Sand - Gravel Trace: Si
+			
Stratum ID:	218567156	**Top Depth(m):**	2.4
Bottom Depth(m):	6.0	**Stratum Desc:**	Grey-Brown to Grey Fill-Misc Silty Clay With: Sa W Gr W Constr Debris
+			
Stratum ID:	218567157	**Top Depth(m):**	6.0
Bottom Depth(m):	9.1	**Stratum Desc:**	Grey Firm Silty Clay Occasional: F Sa
+			
Stratum ID:	218567158	**Top Depth(m):**	9.1
Bottom Depth(m):	11.9	**Stratum Desc:**	Brown Compact to Dense Sand Trace: Gr
+			
Stratum ID:	218567159	**Top Depth(m):**	11.9
Bottom Depth(m):	17.9	**Stratum Desc:**	Grey Very Dense Sand - Gravel Trace: Si Occasional: Cob
+			
Stratum ID:	218567160	**Top Depth(m):**	17.9
Bottom Depth(m):	18.4	**Stratum Desc:**	Grey Bedrock Limestone
+			
Stratum ID:	218567161	**Top Depth(m):**	18.4
Bottom Depth(m):	23.0	**Stratum Desc:**	Grey Bedrock Limestone

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
25	1 of 1	NW/225.0	89.0	ON	BORE

Borehole ID:	801188	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Hollow stem auger	**UTM Zone:**	18
Easting:	440936.15	**Northing:**	5020639.28
Location Accuracy:		**Orig. Ground Elev m:**	88.9
Elev. Reliability Note:		**DEM Ground Elev m:**	86
Total Depth m:	21.3	**Primary Name:**	BH 1
Township:		**Concession:**	

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

Lot:		**Municipality:**	
Completion Date:	02-DEC-1976	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218567143	**Top Depth(m):**	0.0
Bottom Depth(m):	2.4	**Stratum Desc:**	Brown Very Loose Fill-Misc Sand - Gravel Occasional: Cob
+			
Stratum ID:	218567144	**Top Depth(m):**	2.4
Bottom Depth(m):	4.0	**Stratum Desc:**	Grey-Brown Very Loose Fill-Misc Sand With: Cl W Si Trace: Gr Tr Org M
+			
Stratum ID:	218567145	**Top Depth(m):**	4.0
Bottom Depth(m):	9.9	**Stratum Desc:**	Grey Firm to Stiff Silty Clay Occasional: F Sa
+			
Stratum ID:	218567146	**Top Depth(m):**	9.9
Bottom Depth(m):	12.6	**Stratum Desc:**	Brown Dense Sand Trace: Gr
+			
Stratum ID:	218567147	**Top Depth(m):**	12.6
Bottom Depth(m):	18.2	**Stratum Desc:**	Grey Dense Sand - Gravel Occasional: Cob
+			
Stratum ID:	218567148	**Top Depth(m):**	18.2
Bottom Depth(m):	21.3	**Stratum Desc:**	Grey Bedrock Limestone WITH SHALE

---

26 **1 of 1** **S/232.9** **89.0** **ON** **BORE**

Borehole ID:	806879	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Hollow stem auger	**UTM Zone:**	18
Easting:	441067.6	**Northing:**	5020222.89
Location Accuracy:		**Orig. Ground Elev m:**	89
Elev. Reliability Note:		**DEM Ground Elev m:**	88
Total Depth m:	5.2	**Primary Name:**	BH99-2
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	06-JUL-1999	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218590531	**Top Depth(m):**	4.0
Bottom Depth(m):	5.2	**Stratum Desc:**	Brown Compact Sand Trace: Si
+			
Stratum ID:	218590523	**Top Depth(m):**	0.0
Bottom Depth(m):	0.1	**Stratum Desc:**	Topsoil
+			
Stratum ID:	218590524	**Top Depth(m):**	0.1
Bottom Depth(m):	0.4	**Stratum Desc:**	Brown Fill-Misc Sand
+			

Stratum ID:	218590525	**Top Depth(m):**	0.4
Bottom Depth(m):	1.8	**Stratum Desc:**	Brown Compact Fill-Misc sand silt With: Gr
+			
Stratum ID:	218590526	**Top Depth(m):**	1.8
Bottom Depth(m):	2.4	**Stratum Desc:**	Grey-Brown Stiff Fill-Misc Silty Clay Trace: Org M
+			
Stratum ID:	218590527	**Top Depth(m):**	2.4
Bottom Depth(m):	2.6	**Stratum Desc:**	Silt - Sand
+			
Stratum ID:	218590528	**Top Depth(m):**	2.6
Bottom Depth(m):	3.0	**Stratum Desc:**	Grey-Brown Stiff Weathered Crust Silty Clay Trace: Org M
+			
Stratum ID:	218590529	**Top Depth(m):**	3.0
Bottom Depth(m):	3.6	**Stratum Desc:**	Brown Compact Sand Trace: Gr
+			
Stratum ID:	218590530	**Top Depth(m):**	3.6
Bottom Depth(m):	4.0	**Stratum Desc:**	Brown Compact Silt - Sand

---

27 **1 of 1** **SSW/235.7** **88.0** **BORE**

ON

Borehole ID:	801998	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Power auger	**UTM Zone:**	18
Easting:	440945.99	**Northing:**	5020253.15
Location Accuracy:		**Orig. Ground Elev m:**	88.1
Elev. Reliability Note:		**DEM Ground Elev m:**	87.4
Total Depth m:	6.1	**Primary Name:**	BH 1
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	18-OCT-1972	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218570377	**Top Depth(m):**	0.0
Bottom Depth(m):	0.8	**Stratum Desc:**	Brown Base Sand With: Gr
+			
Stratum ID:	218570378	**Top Depth(m):**	0.8
Bottom Depth(m):	1.2	**Stratum Desc:**	Dark Brown Peat
+			
Stratum ID:	218570379	**Top Depth(m):**	1.2
Bottom Depth(m):	1.8	**Stratum Desc:**	Grey-Brown Compact Sand With: Si
+			
Stratum ID:	218570380	**Top Depth(m):**	1.8
Bottom Depth(m):	2.3	**Stratum Desc:**	Grey-Brown Firm Silty Clay
+			
Stratum ID:	218570381	**Top Depth(m):**	2.3
Bottom Depth(m):	3.4	**Stratum Desc:**	Light Brown Compact Sand

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB

+

Stratum ID:	218570382	**Top Depth(m):**	3.4
Bottom Depth(m):	6.1	**Stratum Desc:**	Compact to Dense Sand Trace: Si Tr Gr

---

28 **1 of 1** **S/242.0** **89.0** **ON** **BORE**

Borehole ID:	800223	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Boring	**UTM Zone:**	18
Easting:	441111.66	**Northing:**	5020218.07
Location Accuracy:		**Orig. Ground Elev m:**	90.9
Elev. Reliability Note:		**DEM Ground Elev m:**	88
Total Depth m:	11.3	**Primary Name:**	B.H.206
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	01-OCT-1971	**Static Water Level:**	2.7
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218564111	**Top Depth(m):**	0.0
Bottom Depth(m):	0.1	**Stratum Desc:**	Fill-Misc Sand - Gravel
+			
Stratum ID:	218564112	**Top Depth(m):**	0.1
Bottom Depth(m):	1.4	**Stratum Desc:**	Brown Fill-Misc Silty Clay With: Sa W Gr
+			
Stratum ID:	218564113	**Top Depth(m):**	1.4
Bottom Depth(m):	1.8	**Stratum Desc:**	Dark Brown Silt With: Org M Organic Silt
+			
Stratum ID:	218564114	**Top Depth(m):**	1.8
Bottom Depth(m):	2.3	**Stratum Desc:**	Very Stiff Weathered Crust Silty Clay
+			
Stratum ID:	218564115	**Top Depth(m):**	2.3
Bottom Depth(m):	4.4	**Stratum Desc:**	Brown Compact Sand With: Gr
+			
Stratum ID:	218564116	**Top Depth(m):**	4.4
Bottom Depth(m):	6.1	**Stratum Desc:**	Grey Compact Sand With: Si
+			
Stratum ID:	218564117	**Top Depth(m):**	6.1
Bottom Depth(m):	11.3	**Stratum Desc:**	Grey-Brown Compact Sand With: Gr Gravel Content increasing below 33ft depth

---

29 **1 of 1** **WNW/244.8** **88.0** **ON** **BORE**

Borehole ID:	612378	**Type:**	Borehole
Use:		**Status:**	
Drill Method:		**UTM Zone:**	18
Easting:	440831	**Northing:**	5020522

Location Accuracy:		**Orig. Ground Elev m:**	86.9
Elev. Reliability Note:		**DEM Ground Elev m:**	88
Total Depth m:	-999	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:		**Static Water Level:**	2.1
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218391056	**Top Depth(m):**	0.0
Bottom Depth(m):	12.8	**Stratum Desc:**	CLAY,SAND.
+			
Stratum ID:	218391057	**Top Depth(m):**	12.8
Bottom Depth(m):	22.6	**Stratum Desc:**	SAND. WATER STABLE AT 278.1 FEET.
+			
Stratum ID:	218391058	**Top Depth(m):**	22.6
Bottom Depth(m):	39.6	**Stratum Desc:**	BEDROCK,LIMESTONE. GREY.
+			
Stratum ID:	218391059	**Top Depth(m):**	39.6
Bottom Depth(m):		**Stratum Desc:**	BEDROCK,SANDSTONE. FF,FISSURED. CLAY,SILT. GREY,SOFT,FISSURED. 00010 044 00100 055 0

---

30 **1 of 1** **NNW/245.9** **89.0** **ON** **BORE**

Borehole ID:	801214	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Hollow stem auger	**UTM Zone:**	18
Easting:	440959.64	**Northing:**	5020677.34
Location Accuracy:		**Orig. Ground Elev m:**	87.8
Elev. Reliability Note:		**DEM Ground Elev m:**	86.9
Total Depth m:	9.1	**Primary Name:**	BH 76-8
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	20-OCT-1976	**Static Water Level:**	5.7
Primary Water Use:		**Sec. Water Use:**	

--- Details ---

Stratum ID:	218567265	**Top Depth(m):**	0.0
Bottom Depth(m):	0.6	**Stratum Desc:**	Crushed Stone FILL
+			
Stratum ID:	218567266	**Top Depth(m):**	0.6
Bottom Depth(m):	2.4	**Stratum Desc:**	Brown Loose Silt - Sand Trace: Gr
+			
Stratum ID:	218567267	**Top Depth(m):**	2.4
Bottom Depth(m):	6.3	**Stratum Desc:**	Grey Soft to Firm Silty Clay With: F Sa
+			
Stratum ID:	218567268	**Top Depth(m):**	6.3

Bottom Depth(m):	7.0	***Stratum Desc:***	Grey Compact Sand Trace: Si
+			
Stratum ID:	218567269	***Top Depth(m):***	7.0
Bottom Depth(m):	9.1	***Stratum Desc:***	Grey Compact Sand Trace: Si

Unplottable Summary

DB	Company Name/Site Name	Address	City	Postal
AAGR		Lot 30 Con 2	City of Ottawa ON	
CA	CARLING REALTY COMPANY LTD. 7-0486-89	STORMWATER MANAGEMENT	OTTAWA CITY ON	
CA	City of Ottawa	Knoxdale Road between Newhaven Street and Woodroffe Avenue	Ottawa ON	
CA	MERIVALE DEVELOPMENTS LTD.	MEDHURST DR.	NEPEAN CITY ON	
CA	CARLING REALTY CO. LTD.	MEDHURST DR.	NEPEAN CITY ON	
CA	R.M. OF OTTAWA-CARLETON	WOODROFFE AVE. S.W.M. FACILITY	NEPEAN CITY ON	
CA	City of Ottawa	Woodroffe Avenue	Ottawa ON	
CA	CARLING REALTY CO. LTD.	MEDHURST DR.	NEPEAN CITY ON	
CA	MERIVALE DEVELOPMENTS LTD.	MEDHURST DR.	NEPEAN CITY ON	
CONV	IMPERIAL OIL LIMITED		NORTH YORK ON	
CONV	PRODUCE PROCESSORS LIMITED		ON	
CONV	IMPERIAL OIL LIMITED		DON MILLS ON	
CONV	PRODUCE PROCESSORS LIMITED		ON	
ECA	City of Ottawa	Woodroffe Avenue (from Highway 417 to 170m north of Baseline Road	Ottawa ON	
EHS		Knoxdale Rd. (between Woodroffe Ave. and Newhaven St.)	Ottawa ON	
EHS		Woodroffe Ave (West Hunt Club Rd to CN Rail Line)	Ottawa ON	
GEN	IMPERIAL OIL LTD	ESSO PETROLEUM CANADA OTTAWA INTERNATIONAL AIRPORT	OTTAWA ON	M5W 1K3

LIMO	The Corporation of the Township of Rideau	Lot 31, Concession 2	Ottawa ON	
NATE	ASPECESSO		OTTAWA ON	
NEES	ESSO PETROLEUM		NEPEAN CITY ON	
NEES	ESSO PETROLEUM		OTTAWA CITY ON	
NEES	QUEENSWAY TANK LINES		OTTAWA CITY ON	
NEES	IMPERIAL OIL		OTTAWA CITY ON	
NEES	ASPECESSO		OTTAWA ON	
NEES	IMPERIAL OIL		NEPEAN CITY ON	
NEES	ESSO PETROLEUM CANADA		NEPEAN CITY ON	
NEES	ESSO PETROLEUM		OTTAWA CITY ON	
NPCB	ONTARIO HYDRO	WOODROFFE T.S.; RP 341791, BLOCK B	OTTAWA ON	
RST	417 VARS-EMBRUN ESSO GAS BAR	RR 66 LCD S	OTTAWA ON	K1T 3Z4
SPL	ESSO PETROLEUM CANADA	TRANSPORT TRUCK (CARGO)	OTTAWA CITY ON	
SPL	ESSO PETROLEUM CANADA	TANK TRUCK (CARGO)	OTTAWA CITY ON	
SPL		Woodroffe Avenue and West Hunt Club<UNOFFICIAL>	Ottawa ON	
SPL	CANADIAN WASTE SERVICES	KNOXDALE JUST E OF CONOVER,N SIDE OF RD MOTOR VEHICLE (OPERATING FLUID)	OTTAWA CITY ON	
SPL	ESSO AVITAT	OTTAWA INTERNATIONAL AIRPORT TANKER TRUCK	OTTAWA CITY ON	
SPL	ESSO PETROLEUM CANADA	BULK STATION	OTTAWA CITY ON	
SPL	ESSO AVITAT	OTTAWA INTERNATIONAL AIRPORT, AVITAT RAMP	OTTAWA CITY ON	
SPL	ESSO PETROLEUM CANADA	SERVICE STATION	NEPEAN CITY ON	
SPL	IMPERIAL OIL	TANK TRUCK (CARGO)	NEPEAN CITY ON	

SPL	ESSO AVITAT	OTTAWA INTERNATIONAL AIRPORT TANKER TRUCK	OTTAWA CITY ON
SPL	ESSO AVITAT	MCDONALD CARTIER INTERNATIONAL AIRPORT TANKER TRUCK	OTTAWA CITY ON
SPL	ESSO PETROLEUM CANADA	ESSO DISTRIBUTION STATION BULK STATION	OTTAWA CITY ON
SPL	ESSO AVITAT	OTTAWA INTERNATIONAL AIRPORT TANKER TRUCK	OTTAWA CITY ON
SPL	ESSO AVITAT	MCDONALD CARTIER INTERNATIONAL AIRPORT	OTTAWA CITY ON
SPL	ESSO AVITAT		OTTAWA CITY ON
SPL	Esso Petroleum Canada, A Division of Imperial Oil Limited	Nepean	Ottawa ON
SPL	ESSO PETROLEUM CANADA	OTTAWA AIRPORT TANK TRUCK (CARGO)	OTTAWA CITY ON
SPL	ESSO AVITAT		OTTAWA CITY ON
WWIS		lot 31	ON
WWIS		lot 31	ON
WWIS		lot 31	ON
WWIS		lot 31	ON
WWIS		lot 31	ON
WWIS		lot 31	ON

Unplottable Report

Site: *Lot 30 Con 2 City of Ottawa ON*

Database: AAGR

Type:	Quarry
Region/County:	Ottawa-Carleton
Township:	City of Ottawa
Concession:	2
Lot:	30
Size (ha):	3.7
Landuse:	
Comments:	

Site: *CARLING REALTY COMPANY LTD. 7-0486-89 STORMWATER MANAGEMENT OTTAWA CITY ON*

Database: CA

Certificate #:	3-0602-89-
Application Year:	89
Issue Date:	7/7/1989
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: *City of Ottawa Knoxdale Road between Newhaven Street and Woodroffe Avenue Ottawa ON*

Database: CA

Certificate #:	9645-8D2JV2
Application Year:	2011
Issue Date:	1/20/2011
Approval Type:	Municipal and Private Sewage Works
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: *MERIVALE DEVELOPMENTS LTD. MEDHURST DR. NEPEAN CITY ON*

Database: CA

Certificate #: 3-0170-87-
Application Year: 87
Issue Date: 3/3/1987
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***CARLING REALTY CO. LTD.***
MEDHURST DR. NEPEAN CITY ON

Database: ***CA***

Certificate #: 3-2117-87-
Application Year: 87
Issue Date: 11/25/1987
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***R.M. OF OTTAWA-CARLETON***
WOODROFFE AVE. S.W.M. FACILITY NEPEAN CITY ON

Database: ***CA***

Certificate #: 3-0514-93-
Application Year: 93
Issue Date: 6/15/1993
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***City of Ottawa***
Woodroffe Avenue Ottawa ON

Database: ***CA***

Certificate #: 9466-74ZR66
Application Year: 2007
Issue Date: 8/13/2007
Approval Type: Municipal and Private Sewage Works
Status: Approved

Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***CARLING REALTY CO. LTD.***
MEDHURST DR. NEPEAN CITY ON

Database: ***CA***

Certificate #: 7-1788-87-
Application Year: 87
Issue Date: 11/25/1987
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***MERIVALE DEVELOPMENTS LTD.***
MEDHURST DR. NEPEAN CITY ON

Database: ***CA***

Certificate #: 7-0137-87-
Application Year: 87
Issue Date: 3/3/1987
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***IMPERIAL OIL LIMITED***
NORTH YORK ON

Database: ***CONV***

File No.:
Crown Brief No.:
Ministry District:
Region: EASTERN REGION
Description: FAILED TO INSPECT OIL/WATER SEPARATOR WEEKLY & MAINTAIN LOG BOOK AT SITE

--- Details ---
Date Charged: 6/4/93
Fine: $1,000
Act/Regulation/Section: OWRA- -66(3)

Charge Disposition:
+
Date Charged: 6/4/93
Fine: $4,000
Act/Regulation/Section: OWRA- -66(3)
Charge Disposition:

Site: ***PRODUCE PROCESSORS LIMITED ON*** ***Database:*** ***CONV***

File No.:
Crown Brief No.: 00-0026-0263
Ministry District: BELLEVILLE
Region: EASTERN REGION
Description: ESTABLISH A WATER WORKS WITHOUT OBTAINING A CERTIFICATE OF APPROVAL AND FAIL TO SUBMIT THE ANNUAL REPORT ON TIME FOR 1997 AND 1998.

--- Details ---
Date Charged: 9/22/00
Fine: $2,000.00
Act/Regulation/Section: OWRA- -107(3)
Charge Disposition: SUSPENDED SENTENCE
+
Date Charged: 9/22/00
Fine: $3,000.00
Act/Regulation/Section: OWRA- -107(3)
Charge Disposition: SUSPENDED SENTENCE
+
Date Charged: 9/22/00
Fine: $3,000.00
Act/Regulation/Section: OWRA- -107(3)
Charge Disposition: SUSPENDED SENTENCE
+
Date Charged: 9/22/00
Fine: $3,000.00
Act/Regulation/Section: OWRA- -34 (3) (D)
Charge Disposition: SUSPENDED SENTENCE
+
Date Charged: 9/22/00
Fine: $3,000.00
Act/Regulation/Section: OWRA- -34 (3) (D)
Charge Disposition: SUSPENDED SENTENCE
+
Date Charged: 9/22/00
Fine: $3,000.00
Act/Regulation/Section: OWRA- -52(1)
Charge Disposition: SUSPENDED SENTENCE

Site: ***IMPERIAL OIL LIMITED DON MILLS ON*** ***Database:*** ***CONV***

File No.:
Crown Brief No.:
Ministry District:
Region: EASTERN REGION
Description: FAILED TO COMPLY WITH CONDITIONS OF C. OF A.

--- Details ---
Date Charged: 6/4/93
Fine: $6,000
Act/Regulation/Section: OWRA- -66(3)

Charge Disposition:
+
Date Charged: 6/4/93
Fine: $6,000
Act/Regulation/Section: OWRA- -66(3)
Charge Disposition:

Site: ***PRODUCE PROCESSORS LIMITED***
ON

Database: ***CONV***

File No.:
Crown Brief No.: 98-0227-0053
Ministry District: BELLEVILLE
Region: EASTERN REGION
Description: ALTERING AN EXISTING SEWAGE WORKS BY EXPANDING AND SERVICING AN ADDITIONAL SITE, WITHOUT AN APPROVAL GRANTED BY THE DIRECTOR.

--- Details ---
Date Charged: 9/22/00
Fine: $3,000.00
Act/Regulation/Section: OWRA- -53(1)
Charge Disposition: SUSPENDED SENTENCE

Site: ***City of Ottawa***
Woodroffe Avenue (from Highway 417 to 170m north of Baseline Road Ottawa ON

Database: ***ECA***

CofA Number: 6142-8TXKLK
Date: 5/4/2012
Status: Approved
Project Type: Municipal and Private Sewage

Site:
Knoxdale Rd. (between Woodroffe Ave. and Newhaven St.) Ottawa ON

Database: ***EHS***

Order No.: 20091217031
Report Date: 12/23/2009
Report Type: Custom Report
Search Radius (km): 0.25
Addit. Info Ordered: Fire Insur. Maps and/or Site Plans; Title Search; City Directory

---

Site:
Woodroffe Ave (West Hunt Club Rd to CN Rail Line) Ottawa ON

Database: ***EHS***

Order No.: 20040713004
Report Date: 7/15/04
Report Type: Custom Report
Search Radius (km): 0.25
Addit. Info Ordered:

Site: ***IMPERIAL OIL LTD***
ESSO PETROLEUM CANADA OTTAWA INTERNATIONAL AIRPORT OTTAWA ON M5W 1K3

Database: ***GEN***

Generator #: ON0000713
Approval Yrs: 86,87,88,89,90
SIC Code: 4523
SIC Description: AIRCRAFT SEVICING

--- Details ---

Waste Code:	251
Waste Description:	OIL SKIMMINGS & SLUDGES

Site: ***The Corporation of the Township of Rideau***
Lot 31, Concession 2 Ottawa ON

Database: ***LIMO***

C of A Number:	A461202
Operation Status:	Closed
C of A Issue Date:	
Site Name:	Rideau Landfill
MOE Region:	
MOE District:	
C of A Issued to:	
Landfill Type:	
Site County:	
Total Site Area:	
Footprint:	
Total Approved Capac:	
Fill Rate:	
Contam. Atten. Zone:	
Air Emmis. Monitor:	
Groundwater Monitor:	
Surf. Water Monitor:	
Landfill Gas Monitor:	
Natural Attenuation:	
Liners:	
Cover Material:	
Leachate Off Site:	
Leachate On Site:	
Landfill Gas Manag.(P):	
Landfill Gas Manag.(F):	
Landfill Gas Manag.(E):	
Financial Assurance:	
Req Coll. Landfill Gas:	
Landfill Gas Collected:	
Est Remain Capac(ERC):	
ERC Date Last Determ.:	
ERC Methodology:	
Total Waste Rec.(TWR):	
TWR Methodology:	
Last Reporting Year:	

Site: ***ASPECESSO***
OTTAWA ON

Database: ***NATE***

File No.:	MOE79480
Spill Date:	791022
Lead Agency:	
DOE on Scene:	
Reported By:	Province
Material Reaction:	
Basin:	St. Lawrence River Drainage
Air:	
Land:	Y
Fresh Water:	
Ground Water:	
Salt Water:	
Other Environment:	

Waterbody:	
Cause:	Underground Tank Leak
Reason:	Corrosion
Source:	Service Station
Sector:	Petroleum
Ship No.:	
Ship Name:	
Clean Up By:	polluter
Disposal Method:	unknown
Recovery %:	80.00
Act Invoked:	Unknown
Enforcement Resp:	
Fish Kill:	N
Oiled Birds:	N
Other Kill:	N
Vegetation Damage:	N
Property Damage:	N
Drinking Water:	N
Income Loss:	N
Other Consequences:	N
No. of Injuries:	
No. of Evacuations:	
Fine:	
No. of Dead:	
Cleanup Cost:	
Material:	gasoline
Amount (ton):	
Volume (L):	
Concentration:	
Phase:	
Additional Info:	

Site: ***ESSO PETROLEUM***
NEPEAN CITY ON

Database: ***NEES***

Incident Date:	5/20/88
Contaminant:	GASOLINE
Amount:	0
Units:	Overflow
Quantity:	
Cause:	Error
Source:	Service Station
Reason:	
Sector:	Petroleum

Site: ***ESSO PETROLEUM***
OTTAWA CITY ON

Database: ***NEES***

Incident Date:	2/10/89
Contaminant:	GASOLINE
Amount:	0
Units:	Valve, Fitting Leak
Quantity:	
Cause:	Unknown
Source:	Service Station
Reason:	
Sector:	Petroleum

Site: ***QUEENSWAY TANK LINES***
OTTAWA CITY ON

Database:
NEES

Incident Date:	2/23/89
Contaminant:	DIESEL FUEL
Amount:	0
Units:	Discharge
Quantity:	
Cause:	Error
Source:	Tank Truck
Reason:	
Sector:	Transportation

Site: ***IMPERIAL OIL***
OTTAWA CITY ON

Database:
NEES

Incident Date:	1/8/88
Contaminant:	UNKNOWN
Amount:	0
Units:	OA
Quantity:	
Cause:	Unknown
Source:	Tank Truck
Reason:	
Sector:	Petroleum

Site: ***ASPECESSO***
OTTAWA ON

Database:
NEES

Incident Date:	10/22/79
Contaminant:	gasoline
Amount:	
Units:	
Quantity:	
Cause:	Underground Tank Leak
Source:	Service Station
Reason:	Corrosion
Sector:	Petroleum

Site: ***IMPERIAL OIL***
NEPEAN CITY ON

Database:
NEES

Incident Date:	3/4/88
Contaminant:	HEATING OIL
Amount:	0
Units:	Overflow
Quantity:	
Cause:	Equipment Failure
Source:	Tank Truck
Reason:	
Sector:	Petroleum

Site: ***ESSO PETROLEUM CANADA***
NEPEAN CITY ON

Database:
NEES

Incident Date:	3/15/89
Contaminant:	GASOLINE
Amount:	0
Units:	Overflow
Quantity:	
Cause:	Error
Source:	Storage Depot
Reason:	
Sector:	Petroleum

Site: ***ESSO PETROLEUM***
OTTAWA CITY ON

Database: ***NEES***

Incident Date:	4/19/89
Contaminant:	GASOLINE
Amount:	0
Units:	Valve, Fitting Leak
Quantity:	
Cause:	Unknown
Source:	Service Station
Reason:	
Sector:	Petroleum

Site: ***ONTARIO HYDRO***
WOODROFFE T.S.; RP 341791, BLOCK B OTTAWA ON

Database: ***NPCB***

Company Code:	O0960
Transaction Date:	6/1/1988
Inspection Date:	
Industry:	Utility
Site Status:	

Site: ***417 VARS-EMBRUN ESSO GAS BAR***
RR 66 LCD S OTTAWA ON K1T 3Z4

Database: ***RST***

Facility:	Service Stations-Gasoline, Oil & Natural Gas
Description:	

Site: ***ESSO PETROLEUM CANADA***
TRANSPORT TRUCK (CARGO) OTTAWA CITY ON

Database: ***SPL***

Ref No.:	59519
Incident Dt:	11/7/1991
MOE Reported Dt:	11/7/1991
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	ESSO-3 LITRES DIESEL FUELTO GRND UNDER LOADING RACK,COUPLING NOT CLOSED
Incident Cause:	PIPE/HOSE LEAK
Incident Reason:	ERROR
Nature of Impact:	
Receiving Medium:	LAND
Environmental Impact:	NOT ANTICIPATED

Site: ***ESSO PETROLEUM CANADA***
TANK TRUCK (CARGO) OTTAWA CITY ON

Database: ***SPL***

Ref No.:	47843
Incident Dt:	3/19/1991
MOE Reported Dt:	3/20/1991
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	ESSO HOME COMFORT - TANK TRUCK SPILLED APPROX 1 L.HEATING OIL ON GROUND
Incident Cause:	PIPE/HOSE LEAK
Incident Reason:	ERROR
Nature of Impact:	
Receiving Medium:	LAND
Environmental Impact:	NOT ANTICIPATED

Site:
Woodroffe Avenue and West Hunt Club<UNOFFICIAL> Ottawa ON

Database: ***SPL***

Ref No.:	8444-7ALFW9
Incident Dt:	
MOE Reported Dt:	1/6/2008
Contaminant Name:	DIESEL FUEL
Contaminant Quantity:	180 L
Incident Summary:	Woodroffe Avenue: MVA: 40 gallons of diesel to ground
Incident Cause:	Other Transport Accident
Incident Reason:	
Nature of Impact:	
Receiving Medium:	
Environmental Impact:	Not Anticipated

Site: ***CANADIAN WASTE SERVICES***
KNOXDALE JUST E OF CONOVER,N SIDE OF RD MOTOR VEHICLE (OPERATING FLUID) OTTAWA CITY ON

Database: ***SPL***

Ref No.:	236764
Incident Dt:	8/22/2002
MOE Reported Dt:	8/22/2002
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	CDN WASTE-9 L HYDR.OIL TO DRAIN, CONTAINED. CLEANING.
Incident Cause:	PIPE/HOSE LEAK
Incident Reason:	EQUIPMENT FAILURE
Nature of Impact:	Water course or lake
Receiving Medium:	WATER
Environmental Impact:	NOT ANTICIPATED

Site: ***ESSO AVITAT***
OTTAWA INTERNATIONAL AIRPORT TANKER TRUCK OTTAWA CITY ON

Database: ***SPL***

Ref No.:	144620
Incident Dt:	8/5/1997
MOE Reported Dt:	8/5/1997
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	ESSO AVITAT- 100L JET A1 TO CONCRETE. CONTAINED AND CLEANED.

Incident Cause: PIPE/HOSE LEAK
Incident Reason: MATERIAL FAILURE
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***ESSO PETROLEUM CANADA***
BULK STATION OTTAWA CITY ON

Database: ***SPL***

Ref No.: 155190
Incident Dt: 5/1/1998
MOE Reported Dt: 5/1/1998
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO-156 L DIESEL TO LOT,LOADING ARM NOT IN TRUCKSCOMPARTMENT,PUMP STARTED.
Incident Cause: OTHER CAUSE (N.O.S.)
Incident Reason: NEGLIGENCE (APPARENT)
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***ESSO AVITAT***
OTTAWA INTERNATIONAL AIRPORT, AVITAT RAMP OTTAWA CITY ON

Database: ***SPL***

Ref No.: 160723
Incident Dt: 10/2/1998
MOE Reported Dt: 10/2/1998
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO-10 L JET FUEL AI TO TARMAC AFTER FUEL-VENTING-CLEANED UP. NO DRAINS.
Incident Cause: OTHER CAUSE (N.O.S.)
Incident Reason: OTHER
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***ESSO PETROLEUM CANADA***
SERVICE STATION NEPEAN CITY ON

Database: ***SPL***

Ref No.: 65520
Incident Dt: 12/23/1991
MOE Reported Dt: 12/24/1991
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO/TRW PETROLEUM: 30 L GASOLINE TO GROUND WHEN TANK OVERFILLED
Incident Cause: CONTAINER OVERFLOW
Incident Reason: ERROR
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***IMPERIAL OIL***
TANK TRUCK (CARGO) NEPEAN CITY ON

Database: ***SPL***

Ref No.: 35439
Incident Dt: 5/29/1990
MOE Reported Dt: 5/29/1990
Contaminant Name:
Contaminant Quantity:
Incident Summary: IMPERIAL OIL - 10 L GASO- LINE TO CONCRETE. CLEAN UP COMPLETED.
Incident Cause: CONTAINER OVERFLOW
Incident Reason: ERROR
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***ESSO AVITAT***
OTTAWA INTERNATIONAL AIRPORT TANKER TRUCK OTTAWA CITY ON

Database: ***SPL***

Ref No.: 202019
Incident Dt: 6/2/2001
MOE Reported Dt: 6/2/2001
Contaminant Name:
Contaminant Quantity:
Incident Summary: M & M FLIGHT SERVICE-10 L GASOLINE TO TARMAC, CONTAINED AND CLEANED.
Incident Cause: OTHER CONTAINER LEAK
Incident Reason: EQUIPMENT FAILURE
Nature of Impact: Water course or lake
Receiving Medium: Land
Environmental Impact: Possible

Site: ***ESSO AVITAT***
MCDONALD CARTIER INTERNATIONAL AIRPORT TANKER TRUCK OTTAWA CITY ON

Database: ***SPL***

Ref No.: 164920
Incident Dt: 2/23/1999
MOE Reported Dt: 2/23/1999
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO - 12 L OF JET FUEL TO TARMAC WHILE FUELING JET AT UPLANDS AIRPORT.
Incident Cause: VALVE/FITTING LEAK OR FAILURE
Incident Reason: OTHER
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***ESSO PETROLEUM CANADA***
ESSO DISTRIBUTION STATION BULK STATION OTTAWA CITY ON

Database: ***SPL***

Ref No.: 46877
Incident Dt: 2/21/1991
MOE Reported Dt: 2/21/1991
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO DISTRIB. STATION - 50 L FURNACE OIL SPILLED TO LOADING DOCK. OV/FILL.
Incident Cause: CONTAINER OVERFLOW
Incident Reason: ERROR
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***ESSO AVITAT***
OTTAWA INTERNATIONAL AIRPORT TANKER TRUCK OTTAWA CITY ON

Database: ***SPL***

Ref No.:	224828
Incident Dt:	5/7/2002
MOE Reported Dt:	5/7/2002
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	M & M FLIGHT SERVICE-10 L JET A-1 TO TARMAC, CONTAINED AND CLEANED.
Incident Cause:	OTHER CONTAINER LEAK
Incident Reason:	EQUIPMENT FAILURE
Nature of Impact:	Multi Media Pollution
Receiving Medium:	LAND
Environmental Impact:	POSSIBLE

Site: ***ESSO AVITAT***
MCDONALD CARTIER INTERNATIONAL AIRPORT OTTAWA CITY ON

Database: ***SPL***

Ref No.:	177058
Incident Dt:	1/28/2000
MOE Reported Dt:	1/28/2000
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	ESSO AVITAT- 15 L FUEL ADDITIVE SPILL TO ASPHALT. CONTAINED/CLEANED.
Incident Cause:	OTHER CONTAINER LEAK
Incident Reason:	MATERIAL FAILURE
Nature of Impact:	
Receiving Medium:	LAND
Environmental Impact:	NOT ANTICIPATED

Site: ***ESSO AVITAT***
OTTAWA CITY ON

Database: ***SPL***

Ref No.:	170215
Incident Dt:	7/14/1999
MOE Reported Dt:	7/15/1999
Contaminant Name:	
Contaminant Quantity:	
Incident Summary:	ESSO AVITAT: JET A-1 FUELSPILL TO GRD. 180 L MAINTENANCE ERROR CLEANED
Incident Cause:	CONTAINER OVERFLOW
Incident Reason:	NEGLIGENCE (APPARENT)
Nature of Impact:	Soil contamination
Receiving Medium:	LAND
Environmental Impact:	NOT ANTICIPATED

Site: ***Esso Petroleum Canada, A Division of Imperial Oil Limited***
Nepean Ottawa ON

Database: ***SPL***

Ref No.:	0874-78WNRU
Incident Dt:	
MOE Reported Dt:	11/13/2007
Contaminant Name:	DIESEL FUEL
Contaminant Quantity:	8 L
Incident Summary:	Errentom Tanklines - 8L diesel to grd
Incident Cause:	Pipe Or Hose Leak
Incident Reason:	Equipment Failure

Nature of Impact: soil contamiination
Receiving Medium: Land
Environmental Impact: Confirmed

Site: ***ESSO PETROLEUM CANADA***
OTTAWA AIRPORT TANK TRUCK (CARGO) OTTAWA CITY ON

Database: ***SPL***

Ref No.: 99461
Incident Dt: 5/4/1994
MOE Reported Dt: 5/4/1994
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO PETROLEUM: 2 L JET A-1 FUEL TO PAVEMENT FROMTANK TRUCK.
Incident Cause: VALVE/FITTING LEAK OR FAILURE
Incident Reason: ERROR
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: ***ESSO AVITAT***
OTTAWA CITY ON

Database: ***SPL***

Ref No.: 169810
Incident Dt: 7/4/1999
MOE Reported Dt: 7/5/1999
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO AVITAT: 5 L JET A1 FUEL SPILL TO GROUND CONTAINED, CLEANED UP
Incident Cause: CONTAINER OVERFLOW
Incident Reason: OVERSTRESS/OVERPRESSURE
Nature of Impact: Soil contamination
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site:
lot 31 ON

Database: ***WWIS***

Well ID:	1526254	***Lot:***	031
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	NEPEAN TOWNSHIP
Easting Nad83:		***Northing Nad83:***	
Zone:	18	***Utm Reliability:***	unknown UTM
Primary Water Use:	Irrigation	***Construction Date:***	09-JUN-92
Sec. Water Use:		***Well Depth:***	380 ft
Pump Rate:	40 GPM	***Static Water Level:***	30 ft
Flow Rate:		***Clear/Cloudy:***	CLOUDY
Specific Capacity:		***Final Well Status:***	Water Supply
Construction Method:	Rotary (Air)	***Flowing (y/n):***	N
Elevation (m):		***Elevation Reliability:***	

Depth to Bedrock:	12	***Overburden/Bedrock:***	Bedrock
Water Type:	FRESH	***Casing Material:***	FRESH

--- Details ---

Thickness:	BROWN	***Original Depth:***	12 ft
Material Colour:	CLAY, BOULDERS, HARD	***Material:***	12 ft
+			
Thickness:	GREY	***Original Depth:***	310 ft
Material Colour:	LIMESTONE, SANDSTONE, LAYERED	***Material:***	298 ft
+			
Thickness:	WHITE	***Original Depth:***	380 ft
Material Colour:	SANDSTONE, SOFT	***Material:***	70 ft

Site: ***Database:*** ***WWIS***

lot 31 ON

Well ID:	1519740	***Lot:***	031
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	NEPEAN TOWNSHIP
Easting Nad83:		***Northing Nad83:***	
Zone:	18	***Utm Reliability:***	unknown UTM
Primary Water Use:	Domestic	***Construction Date:***	01-APR-85
Sec. Water Use:		***Well Depth:***	98 ft
Pump Rate:	50 GPM	***Static Water Level:***	0 ft
Flow Rate:		***Clear/Cloudy:***	CLOUDY
Specific Capacity:		***Final Well Status:***	Water Supply
Construction Method:	Air Precussion	***Flowing (y/n):***	N
Elevation (m):		***Elevation Reliability:***	
Depth to Bedrock:		***Overburden/Bedrock:***	Overburden
Water Type:	FRESH	***Casing Material:***	FRESH

--- Details ---

Thickness:	GREY	***Original Depth:***	98 ft
Material Colour:	GRAVEL	***Material:***	2 ft
+			
Thickness:	GREY	***Original Depth:***	70 ft
Material Colour:	CLAY	***Material:***	70 ft
+			
Thickness:	GREY	***Original Depth:***	96 ft
Material Colour:	HARDPAN, GRAVEL	***Material:***	26 ft

Site: ***Database:*** ***WWIS***

lot 31 ON

Well ID:	1536505	***Lot:***	031
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	
Easting Nad83:		***Northing Nad83:***	
Zone:		***Utm Reliability:***	unknown UTM
Primary Water Use:	Domestic	***Construction Date:***	22-DEC-04
Sec. Water Use:		***Well Depth:***	120 ft
Pump Rate:	30 GPM	***Static Water Level:***	6.8 ft
Flow Rate:		***Clear/Cloudy:***	
Specific Capacity:		***Final Well Status:***	Water Supply
Construction Method:	Rotary (Air)	***Flowing (y/n):***	
Elevation (m):		***Elevation Reliability:***	
Depth to Bedrock:	12	***Overburden/Bedrock:***	Bedrock
Water Type:	FRESH	***Casing Material:***	FRESH, MINERIAL

--- Details ---

Thickness:	BROWN	***Original Depth:***	12 ft
Material Colour:	SAND, STONES	***Material:***	12 ft
+			
Thickness:	GREY	***Original Depth:***	18 ft
Material Colour:	LIMESTONE, FRACTURED	***Material:***	6 ft
+			
Thickness:	GREY	***Original Depth:***	120 ft
Material Colour:	LIMESTONE	***Material:***	102 ft

Site:
lot 31 ON

Database:
WWIS

Well ID:	1534734	***Lot:***	031
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	OTTAWA CITY
Easting Nad83:		***Northing Nad83:***	
Zone:	18	***Utm Reliability:***	unknown UTM
Primary Water Use:	Not Used	***Construction Date:***	31-MAY-04
Sec. Water Use:		***Well Depth:***	40 ft
Pump Rate:		***Static Water Level:***	8 ft
Flow Rate:		***Clear/Cloudy:***	
Specific Capacity:		***Final Well Status:***	Not A Well
Construction Method:	Other Method	***Flowing (y/n):***	N
Elevation (m):		***Elevation Reliability:***	

Depth to Bedrock:		***Overburden/Bedrock:***	Overburden
Water Type:		***Casing Material:***	

--- Details ---

Thickness:		***Original Depth:***	40 ft
Material Colour:	PREV. DRILLED	***Material:***	40 ft

Site: ***Database:*** ***WWIS***

lot 31 ON

Well ID:	1526253	***Lot:***	031
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	NEPEAN TOWNSHIP
Easting Nad83:		***Northing Nad83:***	
Zone:	18	***Utm Reliability:***	unknown UTM
Primary Water Use:	Irrigation	***Construction Date:***	08-JUN-92
Sec. Water Use:		***Well Depth:***	400 ft
Pump Rate:	12 GPM	***Static Water Level:***	30 ft
Flow Rate:		***Clear/Cloudy:***	CLOUDY
Specific Capacity:		***Final Well Status:***	
Construction Method:	Rotary (Air)	***Flowing (y/n):***	N
Elevation (m):		***Elevation Reliability:***	
Depth to Bedrock:	15	***Overburden/Bedrock:***	Bedrock
Water Type:	FRESH	***Casing Material:***	FRESH

--- Details ---

Thickness:	BROWN	***Original Depth:***	15 ft
Material Colour:	CLAY, BOULDERS, HARD	***Material:***	15 ft
+			
Thickness:	GREY	***Original Depth:***	320 ft
Material Colour:	ROCK, SANDSTONE, LAYERED	***Material:***	305 ft
+			
Thickness:	WHITE	***Original Depth:***	400 ft
Material Colour:	SANDSTONE	***Material:***	80 ft

Site: ***Database:*** ***WWIS***

lot 31 ON

Well ID:	1528149	***Lot:***	031
Concession:		***Concession Name:***	
County:	OTTAWA-CARLETON	***Municipality:***	OTTAWA CITY
Easting Nad83:		***Northing Nad83:***	
Zone:	18	***Utm***	unknown UTM

		Reliability:	
Primary Water Use:	Not Used	***Construction Date:***	27-JUL-94
Sec. Water Use:		***Well Depth:***	20 ft
Pump Rate:		***Static Water Level:***	
Flow Rate:		***Clear/Cloudy:***	
Specific Capacity:		***Final Well Status:***	Observation Wells
Construction Method:	Boring	***Flowing (y/n):***	
Elevation (m):		***Elevation Reliability:***	
Depth to Bedrock:		***Overburden/Bedrock:***	Unknown type above a bedrock layer
Water Type:		***Casing Material:***	Not stated

--- Details ---

Thickness:	BLACK	***Original Depth:***	2 ft
Material Colour:	UNKNOWN TYPE	***Material:***	2 ft
+			
Thickness:	GREY	***Original Depth:***	2 ft
Material Colour:	GRANITE	***Material:***	0 ft
+			
Thickness:	BROWN	***Original Depth:***	3 ft
Material Colour:	CLAY, GRAVEL	***Material:***	1 ft
+			
Thickness:	BROWN	***Original Depth:***	4 ft
Material Colour:	FINE SAND, GRAVEL	***Material:***	1 ft
+			
Thickness:	GREY	***Original Depth:***	20 ft
Material Colour:	CLAY, LAYERED	***Material:***	16 ft

Appendix: Database Descriptions

Ecolog Environmental Risk Information Services Ltd (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ***Note:*** *Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Abandoned Aggregate Inventory: Provincial AAGR

The MAAP Program maintains a database of all abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory: Provincial AGR

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Aug 2012

Abandoned Mine Information System: Provincial AMIS

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Jan 2014

Anderson's Waste Disposal Sites: Private ANDR

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritive. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Automobile Wrecking & Supplies: Private AUWR

This database provides an inventory of all known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 2001-Jul 2014

Borehole: Provincial BORE

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2014

Certificates of Approval: Provincial CA

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

Government Publication Date: 1985-Oct 30, 2011*

Commercial Fuel Oil Tanks: Provincial CFOT

Since May 2002, Ontario developed a new act where it became mandatory for fuel oil tanks to be registered with Technical Standards & Safety Authority (TSSA). This data would include all commercial underground fuel oil tanks in Ontario with fields such as location, registration number, tank material, age of tank and tank size.

Government Publication Date: 1948-2014

Chemical Register: Private CHEM

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1992, 1999-Jul 2014

Inventory of Coal Gasification Plants and Coal Tar Sites: Provincial COAL

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions: Provincial CONV

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Feb 2014

Certificates of Property Use: Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994-Jan 2015

Drill Hole Database: Provincial DRL

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886-Jan 2014

Environmental Activity and Sector Registry: Provincial EASR

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Government Publication Date: Oct 31 2011-Mar 2015

Environmental Registry: Provincial EBR

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994-Jan 2015

Environmental Compliance Approval: Provincial ECA

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For CofA's prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 31, 2011-Mar 2015

Environmental Effects Monitoring: Federal EEM

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches: Private EHS

EcoLog ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Aug 2014

Environmental Issues Inventory System: Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

List of TSSA Expired Facilities: Provincial EXP

This is a list of all expired facilities that fall under the TSSA (TSSA Act & Safety Regulations), including the six regulations that exist under the Fuels Safety Division. It will include facilities such as private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. These tanks have been removed and automatically fall under the expired facilities inventory held by TSSA.

Government Publication Date: Current to Nov 2014

Federal Convictions: Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land: Federal FCS

The Federal Contaminated Sites Inventory includes information on all known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: June 2000-Jan 2015

Fisheries & Oceans Fuel Tanks: Federal FOFT

Fisheries & Oceans Canada maintains an inventory of all aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sept 2003

Fuel Storage Tank: Provincial FST

The Technical Standards & Safety Authority (TSSA), under the Technical Standards & Safety Act of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

Government Publication Date: 2010-Nov 2014

Fuel Storage Tank - Historic: Provincial FSTH

The Technical Standards & Safety Authority (TSSA), under the Technical Standards & Safety Act of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary: Provincial GEN

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-Apr 2014

TSSA Historic Incidents: Provincial HINC

This database will cover all incidences recorded by TSSA with their older system, before they moved to their new management system. TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. The TSSA works to protect the public, the environment and property from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from pipelines, diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks: Federal IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of all aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

TSSA Incidents: Provincial INC

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Includes incidents from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

Government Publication Date: June 2009-2014

Landfill Inventory Management Ontario: Provincial LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the ministry compiles new and updated information. The inventory will include small and large landfills. Additionally, each year the ministry will request operators of the larger landfills complete a landfill data collection form that will be used to update LIMO and will include the following information from the previous operating year. This will include additional information such as estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills will include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: 2012

Canadian Mine Locations: Private MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences: Provincial MNR

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the planimetric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Apr 2013

National Analysis of Trends in Emergencies System (NATES): Federal NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports: Provincial NCPL

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Government Publication Date: 1994-2012

National Defence & Canadian Forces Fuel Tanks: Federal NDFT

The Department of National Defence and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defence & Canadian Forces Spills: Federal NDSP

The Department of National Defence and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites: Federal NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Environmental Emergencies System (NEES): Federal NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for all previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. All federal out-of-service PCB containing equipment and all PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-2013

Oil and Gas Wells: Private OGW

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Mar 2015

Ontario Oil and Gas Wells: Provincial OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, well cap date, licence no., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Government Publication Date: 1800-2013

Inventory of PCB Storage Sites: Provincial OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004

Orders: Provincial ORD

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Jan 2015

Canadian Pulp and Paper: Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009

Parks Canada Fuel Storage Tanks: Federal PCFT

Canadian Heritage maintains an inventory of all known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register: Provincial PES

The Ontario Ministry of Environment maintains a database of all manufacturers and vendors of registered pesticides.

Government Publication Date: 1988-Jun 2013

TSSA Pipeline Incidents: Provincial PINC

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. This database will include spills, strike and leaks from recorded by the TSSA.

Government Publication Date: June 2009-2014

Private and Retail Fuel Storage Tanks: Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Government Publication Date: 1989-1996*

Permit to Take Water: Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994-Jan 2015

Ontario Regulation 347 Waste Receivers Summary: Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-2013

Record of Site Condition: Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.
RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Mar 2015

Retail Fuel Storage Tanks: Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Jul 2014

Scott's Manufacturing Directory: Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011

Ontario Spills: Provincial SPL

This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Feb 2014

Wastewater Discharger Registration Database: Provincial SRDS

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-2011

Anderson's Storage Tanks: Private TANK

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks: Federal TCFT

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970-Mar 2007

TSSA Variances for Abandonment of Underground Storage Tanks: Provincial VAR

The TSSA, Under the Liquid Fuels Handling Code and the Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, you may apply to seek a variance from this code requirement. This is a list of all variances granted for abandoned tanks.

Government Publication Date: Current to Nov 2014

Waste Disposal Sites - MOE CA Inventory: Provincial WDS

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: 1970-Mar 2015

Waste Disposal Sites - MOE 1991 Historical Approval Inventory: Provincial WDSH

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Government Publication Date: Up to Oct 1990*

Water Well Information System: Provincial WWIS

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: 1955-Mar 2014

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

APPENDIX G

Freedom of Information Records

Ministry of the Environment and Climate Change

Freedom of Information and Protection of Privacy Office

12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285

Ministère de l'Environnement et de l'Action en matière de changement climatique

Bureau de l'accès à l'information et de la protection de la vie privée

12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075
Téléc.: (416) 314-4285

Ontario

June 4, 2015

Akruti Atawala
SNC-Lavalin Environment
200 - 20 DeBoers Dr
Toronto, ON M3J 0H1

Dear Akruti Atawala:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2015-02643, Your Reference #: 628494

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 1545 Woodroffe Ave, Nepean.

After a thorough search of the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Approvals Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my decision to provide full access to the attached information.

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, detailed below are our charges:

• Search Time 1 hour @ $30/hour	$30.00
• Copying 18 pages @ $0.20/page	$3.60
• Delivery	3.00
• **Total**	**$ 36.60**
• Deposit Received	- 30.00
• **BALANCE WAIVED (NOT REQUIRED)**	**$ 6.60**

The Environmental Approvals Branch has advised that there may be inactive records in the Records Centre, Mississauga. To retrieve these files there is a charge of $60.00 with no guarantee that any records will be located responsive to your request. If you would like us to retrieve these files, **please forward to me at the above address payment by money order or cheque (made payable to the "Minister of Finance (FOI)") or by credit card in the amount of $60.00**. Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form-credit-card-form. Please note, a request for records must usually be answered within 30 calendar days, however Section 27 allows for time extensions under certain circumstances. If you choose to have the files retrieved from the Records Centre, the time for answering your request will be extended for an additional 30 days.

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Ayesha Kapadia at (416) 212-8912.

Yours truly,

Heidi Ritscher
FOI Manager

Attachments

Registration/Notification Number

ON7721580

Legal Company Name

Primary Name:	Imperial Oil	Division Name:	NA

Company Operating Name

Primary Name:	Imperial Oil	Division Name:	NA

Mailing Address

Division Building:	NA	Post Box Number:	NA
Address Line 1:	1 Duncan Mill Road	Address Line 2:	NA
Town/City:	Toronto	Postal Code / Zip Code:	M3B1Z2
County: (if inside Ontario)	METROPOLITAN TORONTO	Province/State (If inside Canada/US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Site Location

This should be the street address of the site that is being registered. You are required to register each site that generates hazardous waste separately.

Division Building:	NA	Post Box Number:	NA
Address Line 1:	1545 Woodroffe Avenue		
Address Line 2:	NA		
Town/City:	Nepean	Postal Code / Zip Code:	K2G 1W2
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province / State (If inside Canada / US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Company Name: **Imperial Oil**
Company Number: **ON7721580 (Generator)**

Active Waste Classes

Active Waste Class Listing

Add New Waste Class Inactive waste classes

Active Off-site Waste Classes

Waste Class	View Details	Hazardous Waste Number (per waste stream)	Reg. 347 Schedules	Disposal Method	Part 2B required	Part 2B complete	Physical State	Off-Site	Status	UnRegister Waste Class
221 - I	View Details	D001	5, 13	Land Disposal	Y	Y	Liquid	Off-Site	Active	
221 - L	View Details	N/A					Liquid	Off-Site	Active	
251 - L	View Details	N/A					Liquid	Off-Site	Active	
252 - L	View Details	N/A					Liquid	Off-Site	Active	

Back

Ontario This site maintained by the Government of Ontario

Technical inquires to Webmaster.
© 2002 Queen's Printer for Ontario

Ontario

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number:	5185-992V76	**File Storage Number:**	SI OT OT WO 100
Module:	Incident Reporting	**Module Type:**	Pollution Incident Report (PIR)
Cross Reference:	(doc link)	**Task Link:**	8756-992V9B
Originating Document:		**Created by:**	Scott Steeves
Incident Report Reference Number:		5185-992V76	
Date Created:	2013/06/26	**Date Completed:**	
Bring Forward Date:		**Bring Forward Reason:**	
Status:	Recommended		
Program	Water - Ground & Surface	**Activity:**	Pollution Incident Reports

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

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

○ Yes ● No ○ To be determined *Click here for Guidance*

Caller or PO Information

Reported By:

First Name	**Last Name**	**Name of Company:**
Martin	Ottawa Fire Dispatch	Ottawa Fire

Contact Mailing Address

Civic Address: **Unit Identifier:**

Delivery Designator: **Delivery Identifier:**

Municipality:	**Postal Station:**	**Province/State:**	**Postal Code:**
Ottawa		Ontario	
Telephone Number:	**Extension:**	**Other Number:**	**Email Address:**
		Fax	

Reported By:

MOE Information

Date & Time Reported to MOE:	2013/06/26 18:47		
Office Receiving Incident Report:	Spills Action Centre		
Incident Info Received By:	Scott Steeves		
MOE Response:	No Field Response	**Site Region:**	Eastern
Date & Time of MOE Arrival at Scene:			
Master Incident Report			

Number:

SAC Action Class: Pollution Incident Reports (PIRs) and "Other" calls

Non-Standard Procedure: No

ERP Call-out Initiated: No

Client(s)

Information

Show Map

Esso Station<UNOFFICIAL>
Mailing Address: Woodroffe and Knoxdale,, , , Ottawa, Ontario, Canada
Physical Address: Lot: , Part: , Woodroffe and Knoxdale,, Ottawa, City, Ontario, Canada
Telephone: , FAX:
Client Type: , NAICS:

Site(s)

Information

Show Map

1545 Woodroffe Aveneu <UNOFFICIAL>
Address: Lot: , Part: , Woodroffe and Knoxdale, Ottawa, City,
District Office: Ottawa

Incident Information

Incident Summary: Esso Station: diesel pump leaking fuel
cannot be longer than 60 characters

Incident Description: Caller indicates that a complainant called the Ottawa FD to report that the diesel nozzle at the Esso Station repeatedly spills fuel when it is placed back into the pump holder. Caller estimates that approximately 100mL of fuel is spilled each time. Caller states that this has been ongoing for approximately 6 weeks. Caller states there is considerable staining on the pad surrounding the diesel pump.

report exported to tssa.

LL - June 27, 2013- IR referred to TSSA as noted above. Document andf file. NFA.

Links & Comments:

Attachments Names:

Date & Time of Incident **Incident Date Confirmation?** Actual
2013/06/26

Source Type:

Sector Type:

Nearest Watercourse:

Watershed Category Code:

Environmental Impact:

Nature of Impact:

Incident Event:

Incident Reason:

Damaged Party: No

Contaminants Table

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

Controller of Material: Esso
Owner of Material: Esso
Estimated Clean Up Cost:
Who Cleaned Up:
% Clean Up: %
MOE/Other Agencies Involved:

Voluntary / Mandatory Abatement

Is there Voluntary Abatement Activity? ○ Yes ● No ○ To be determined

Voluntary / Mandatory Compliance Items

Type	Parent RefNo	Work Summary (may be truncated)	Date	AttainList

Offence(s)

Suspected Violation(s)/Offence(s):

Act - Regulation - Section,
Description
{General Offence}

Provincial Officer:

Name: Lance Larkin
Badge No: 723

Work Unit:
District/Area Office: Ottawa District Office
Date: 2013/06/27

Signature:

District/Area Supervisor:

Name:

Work Unit:
District/Area Office:
Date:

Ontario

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number:	8523-8KZNNG	**File Storage Number:**	SI OT NE WO 140
Module:	Incident Reporting	**Module Type:**	Spill
Cross Reference:	(doc link)	**Task Link:**	3756-8KZNZE
Originating Document:		**Created by:**	Julianne Dominski
Incident Report Reference Number:		8523-8KZNNG	
Date Created:	2011/08/23	**Date Completed:**	2014/10/05
Bring Forward Date:		**Bring Forward Reason:**	
Status:	Closed		
Program	Waste - Hazardous & Liquid industrial	**Activity:**	Spills

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

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

○ Yes ● No ○ To be determined ***Click here for Guidance***

Caller or PO Information

Reported By:

First Name	**Last Name**
Lorne	Wedge

Name of Company: Imperial Oil

Contact Mailing Address

Civic Address: **Unit Identifier:**

Delivery Designator: **Delivery Identifier:**

Municipality:	**Postal Station:**	**Province/State:**	**Postal Code:**
Toronto		Ontario	
Telephone Number:	**Extension:**	**Other Number:**	**Email Address:**
(416)441-7866		**Fax**	

Reported By:

MOE Information

Date & Time Reported to MOE:	2011/08/23 13:35		
Office Receiving Incident Report:	Spills Action Centre		
Incident Info Received By:	Julianne Dominski		
MOE Response:	No Field Response	**Site Region:**	Eastern
Date & Time of MOE Arrival at Scene:			
Master Incident Report			

Number:

SAC Action Class: TSSA - Fuel Safety Branch

Non-Standard Procedure: No

ERP Call-out Initiated: No

Client(s)

Information

Show Map

Imperial Oil Limited
Mailing Address: 7100 Jean - Talon est, Montreal, Quebec, Canada, H1M 3R8
Physical Address: 2075 Montreal Rd, Ottawa, City, Ontario, Canada, K1J 6M6
Telephone: (450)922-1539, FAX: (450)922-8572
Client #: 4929-72KS6Z, Client Type: Corporation

Site(s)

Information

Show Map

Woodroffe Ave and Medhurst Site<UNOFFICIAL>
Address: Lot: , Part: , 1545 Woodroffe Ave, Ottawa, City,
District Office: Ottawa

Incident Information

Incident Summary: Imperial Oil: gasoline into groundwater wells, clnd
cannot be longer than 60 characters

Incident Description: 13:35 Caller to SAC(jd) reports that during their annual monitoring for historical free product in their groundwater monitoring wells on June 27. They found 73 mm (1/4 of a litre) of free product (gasoline) in one of thieri groundwater monitoring wells. They purged the system and removed the hydrocarbon. The product was found in the groundwater monitoring well that is adjacent to the Pump Island. The caller is completing a Contaminant Management Plan (CMP) but needs some approvals from the City of Ottawa before he can complete the CMP. Caller was just looking to let a local TSSA inspector know of the incident.

13:41 Paged TSSA
13:45 Briefed Peter (TSSA), emailed report

May 10, 2012 - File transferred to L. Larkin

LL - Dec 14, 2012 - CMP being negotiated with City of Ottawa. City of Ottawa. I emailed R.Barker at the City to find out if they had any issues concerning the site. I emailed SHoyle@tssa.org to find out if this is a file that they ought to refer to MOE, or not.

The City nor TSSA have reported any concerns. The City notifies the ministry if they are not able to work out an off property management agreement. Document and File .NFA.

Links & Comments:

Attachments Names:

Date & Time of Incident **Incident Date Confirmation?** Actual
2011/06/27

Source Type:	Other	**Sector Type:**	Miscellaneous Industrial
Nearest Watercourse:		**Watershed Category Code:**	
Environmental Impact:	Not Anticipated		
Nature of Impact:	Groundwater Pollution		
Incident Cause:	Other Discharges	**Incident Reason:**	Spill
Damaged Party:	No		

Contaminants Table

Contaminant Name	Code	UN#	Limit	Quantity	[units]	[freq]
GASOLINE	12	1203		0.25	L	

Controller of Material:	Imperial Oil	**Owner of Material:**	Imperial Oil
Estimated Clean Up Cost:		**Who Cleaned Up:**	
% Clean Up:	100 %	**Agencies Involved:**	

Voluntary / Mandatory Abatement

Is there Voluntary Abatement Activity? ○ Yes ● No ○ To be determined

Voluntary / Mandatory Compliance Items

Type	Parent RefNo	Work Summary (may be truncated)	Date	AttainList

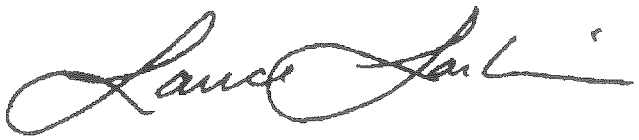
Offence(s)

Suspected Violation(s)/Offence(s):

Act - Regulation - Section,
Description
{General Offence}

Provincial Officer:

Name:	**Lance Larkin**
Badge No:	**723**
Work Unit:	
District/Area Office:	**Ottawa District Office**
Date:	**2014/08/27**
Signature:	



Supervisor:
Name: Jena Leavoy

Work Unit:
District/Area Office: Ottawa District Office
Date: 2014/10/05

Signature:

Ontario

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number:	2153-7M9S5K	**File Storage Number:**	SI OC NE WO 100
Module:	Incident Reporting	**Module Type:**	Spill
Cross Reference:	(doc link)	**Task Link:**	8124-7M9S9Y
Originating Document:		**Created by:**	Jeremy Gamble
Incident Report Reference Number:		2153-7M9S5K	
Date Created:	2008/12/12	**Date Completed:**	2011/05/28
Bring Forward Date:		**Bring Forward Reason:**	
Status:	Closed		
Program	Water - Ground & Surface	**Activity:**	Spills

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

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

○ Yes ● No ○ To be determined ***Click here for Guidance***

Caller or PO Information

Reported By:

First Name	**Last Name**	**Name of Company:**
Scott	Wetton	Imperial Oil

Contact Mailing Address

Civic Address: **Unit Identifier:**

Delivery Designator: **Delivery Identifier:**

Municipality:	**Postal Station:**	**Province/State:**	**Postal Code:**
Ottawa		Ontario	
Telephone Number:	**Extension:**	**Other Number:**	**Email Address:**
(416)441-7841		**Fax**	

Reported By:

MOE Information

Date & Time Reported to MOE:	2008/12/12 15:26		
Office Receiving Incident Report:	Spills Action Centre		
Incident Info Received By:	Jeremy Gamble		
MOE Response:	No Field Response	**Site Region:**	Eastern
Date & Time of MOE Arrival at Scene:			
Master Incident Report			

Number:

SAC Action Class: TSSA - Fuel Safety Branch

Non-Standard Procedure: No

ERP Call-out Initiated: No

Client(s)

Information

Show Map

Site(s)

Information

Show Map

Gas Station<UNOFFICIAL>
Address: Lot: , Part: , 1545 Woodroffe Avenue, Nepean, Ottawa, City,
District Office: Ottawa

Incident Information

Incident Summary: TSSA - Leak of gasoline from underground tank to groundwater
cannot be longer than 60 characters

Incident Description: Dec 12, 2008 - Received a call from Scott Wetton (Imperial Oil) concerning a historical impact where gasoline leaked from an underground tank at a gas station. They are currently in the process of a Phase 2 assessment replacing the storage tanks and in one monitoring well onsite they observed a gasoline sheen on the surface of the groundwater. There are no known drinking water wells in the area as there is a municipal water supply. The property is an active gas bar.

May 27, 2011 - The Ministry's Ottawa District Office has not received any further information or notification from TSSA that the gasoline has migrated off-site; therefore, no further MOE action required at this time. File closed.

Links & Comments:

Attachments Names:

Date & Time of Incident **Incident Date Confirmation?** Estimated
2008/12/12

Source Type: Service Station **Sector Type:**

Nearest Watercourse: **Watershed Category Code:**

Environmental Impact: Not Anticipated

Nature of Impact: Groundwater Pollution

Incident Cause: Tank (Underground) Leak **Incident Reason:** Unknown - Reason not determined

Damaged Party: No

Contaminants Table

Contaminant Name	Code	UN#	Limit	Quantity	[units]	[freq]

GASOLINE	12	1203	

Controller of Material:	Imperial Oil	**Owner of Material:**	Imperial Oil
Estimated Clean Up Cost:		**Who Cleaned Up:**	
% Clean Up:	%	**Agencies Involved:**	

Voluntary / Mandatory Abatement

Is there Voluntary Abatement Activity? ○ Yes ● No ○ To be determined

Voluntary / Mandatory Compliance Items

Type	Parent RefNo	Work Summary (may be truncated)	Date	AttainList

Offence(s)

Suspected Violation(s)/Offence(s):

Act - Regulation - Section,
Description
{General Offence}

Provincial Officer:

Name: Emily Straberger
Badge No: 1281

Work Unit:
District/Area Office: Ottawa District Office
Date: 2011/05/27

Signature:

Supervisor:

Name: Jason Ryan

Work Unit:
District/Area Office:
Date: 2011/05/28

Signature:

Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

INCIDENT REPORT

Reference Number:	1233-9S7KZL	**Module Type:**	Pollution Incident Report (PIR)
Status:	Closed	**File Storage Number:**	SI
Program:	Water - Ground & Surface	**Activity:**	Pollution Incident Reports

Caller or PO Reporting/Receiving Information

First Name:
Ron

Last Name:
Vaive

Name of Company:
City of Ottawa - bylaw officer

MAILING ADDRESS

Civic Address:

Unit Identifier:

Delivery Designator:

Delivery Identifier:

Municipality/ Unorganized Twp:	**County/District:**	**Province/State:**	**Postal Code:**
Ottawa(1)		Ontario	
Postal Station:		**Country:**	Canada
Telephone Number:	**Extension:**	**Other Number:**	**Email Address:**
613-580-2424	12127	Fax	

Date Reported to MOE:	2014/12/27	**Time Reported to MOE:**	10:20
Date of Incident:	2014/12/27	**Time of Incident:**	
Incident Date Confirmation:	Actual		

Client(s)

Information

Site(s)

Information
Trailor<UNOFFICIAL>
Address: Lot: , Part: , 1545 Woodroffe Ave, Ottawa, City,
District Office: Ottawa

Incident Summary:

Trailer with running generator

Initial Incident Description (as reported):

Created: Heather Croft (Spills Action Centre) - 2014/12/27 10:20:54 AM

By-law Officer received complaints about a generator that has been running constantly and is quite loud. There is a trailer with pipes going into the ground. Caller states that it is a white pipe that comes from the trailer which enters a white pipe in the ground. There is an emergency contact number on the site and no other markings. Caller reached out to the emergency contact number and they stated that they are based out of Alberta and they have no contacts for Ontario. They had no idea why their trailer would be there. Caller states that he has called his environmental department and they do not know anything.

Caller is wondering why the trailer is there as the generator is running constantly and is a noise nuisance. Caller stood next to the generator and it was clearly heard over the phone.

Caller states that it is at a Tim Horton's/gas station (ESSO - 613 226 6456). Property is owned by Imperial oil, however none of the employees on site know why the trailer is there.

Number on trailer: Parsons Environmental - (Calgary) 1 800 661 8141

Caller is requesting a call back. Ron Cell: 613-882-5273

10:30SAC(hc) to Parsons Environmental - The call centre will be reaching out to an on call who may be able to provide SAC with more information.

SAC(hc) searched IDS. See 8523-8KZNNG from 2011/08/23. Possibly related.

10:51SAC9hc) Chris Raghavan (647 618 2098) - caller states that it is would be a mobile treatment trailer (most likely a soil vapour extraction trailer). Caller states that they typically run 24/7 and are usually unmanned. It is probably checked once a month to ensure that everything is running properly. However, caller was unaware of a trailer located in Ottawa.

10:55SAC(hc) to Ron (by-law officer) cell - updated.

SAC Action Class:	Pollution Incident Reports (PIRs) and "Other" calls
Non-Standard Procedure:	No

Incident Description:

Last update: Lance Larkin (Ottawa District Office) - 2014/12/30 04:22:14 PM

December 30, 2014. MOE ODO duty officer. I am not aware that mobile generators require an air approval. given that there is some history with our office and EO Lance Larkin. i am forwarding this IR to Lance for his followup

LL - December 30, 2014 - 16:03 - I left Mr. Ron Vaive a voice mail. At 16:13, I called parson's and received an answering service. I relayed the information about the noise issue and the address of the equipment. Answering service indicated that Jamie would call me back. Note that I will include a telephone report if I receive a call back.

Refer to Supervisor for re-assignment. The file is noise related therfore it may be referred to the info team or air team. There is no active contaminated site file for this Site. As per the latest closed IR, jurisdiction is currently with TSSA for the contaminated site aspects.

Incident Description Continuation:

Not Available

Incident Update:

Lance Larkin - 2014/12/31 created; 2014/12/31 last update - Ottawa District Office
On December 30, 2014 at 16:32 Mr. John Halstead (Parson's) called back (416-931-2012). He indicated that he called his contact in Cornwall who will be driving up to Ottawa on the 31st to turn off the generator by the afternoon. The equipment will remain off until after new years day. Any noise issues will also be mitigated going forward through trouble shooting.

Dec 30th at 9:51, I called and left a message on Ron Vaive's voice mail letting him know that I had made contact with Parsons who will be sending someone to the Site to address the noise issues by this afternoon.

Noise issue has been addressed. Document and file. No further action at this time.

Was there an MOE field response? No

Were there samples collected / analyzed at any time? No

Health / Environmental Consequences at the Time of Incident

Health / Environmental Consequences: 0 - No Impact

Has a Water Body been impacted?

Receiving Environment:

Incident Event:

Incident Reason:

MOE/Other Agencies Involved:

Was there a discharge / emission / spill of a contaminant to the environment?

No

Environmental Compliance Reporting (ECR)

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

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

No

Voluntary / Mandatory Abatement

Was there Non-Compliance/Non-Conformance Identified? ○ Yes ● No

Voluntary / Mandatory Abatement Items

Not Available

Waste / EGR Information

Waste / EGR Information entries:

Not Available

Document Related Information

Cross Reference:	(doc link)	**Task Link:**	7802-9S7LB6
Originating Document:		**Created by:**	Heather Croft
Date Created:	2014/12/27	**Date Completed:**	2015/01/06
Office Receiving Incident Report:	Spills Action Centre	**Incident Info Received By:**	Heather Croft
Bring Forward Date:		**Bring Forward Reason:**	

Signatures

Provincial Officer:

Name: None Assigned

Badge No:

Work Unit:

District/Area Office:

Date:

Signature:

Supervisor:

Name: Jena Leavoy

Work Unit:

District/Area Office: Ottawa District Office

Date: 2015/01/06

Signature:

Ontario

Ministry of the Environment

OCCURENCE REPORT

Location of Occurence:
NEPEAN CITY
1545 WOODROFFE AVE ESSO SERVICE STATION.

Reg: 4 **Dist:** OT **Municipality:** 20104

Source:
QUEENSWAY TANK LINES

Sector: TA **Source:** TT **SIC:** 4560
UTM:
N: [] E: [] Zone: []

Entered: 1993/07/03 09:31
ORIS No. 9300007376
Abstracts:
Diaries:

Received By: MICHEL CATTAN
Batch: 998
I. E. B. No.

Occurence Type: S
Subtype: L
Occurence Date: 1993/07/03

Work Plan:
Occurence Time: 09:00

Reported By: RON ARDEN
QUEENSWAY TANK LINES
Report to MOE : 1993/07/03 09:31
MOE at Scene:

Telephone No. 613-731-2300 x
Alternate No. x
Assigned To: DAN HARRISON

Address:
635 INDUSTRIAL AVE
OTTAWA
Postal Code:
ERP Contacted:
Callout: []
ERP Name:
NSP: [N]

Syn: QUEENSWAY TANK LINES- 4L GASOLINE TO PAVEMENT AT SERVICE STAT., CLEANED UP

Brief Summary:
CALLER REPORTS 2-4L GASOLINE SPILLED TO THE PAVEMENT AT THE ABOVE MENTIONEDLOCATION WHEN THE DRIVER FINISHED UNLOADING & THE DISPENSER HOSE SLIPPED OUT OF HIS HANDS. NONE TO ANY WATERCOURSES, DRIVER CONTAINED & CLEANED UP GASOLINE WITH SPEEDY DRY.
FAXED TO MCCR.

If there are related reports, record initial/master ORIS No. here >>

Followup Action: Abatement IEB Other
BF Date:
FIELD REPORT RECEIVED ON 93/07/07. NFA REQUIRED, FILE CLOSED.

File Closed: X **Abatement: IEB Other**
Suspected Violation:

Report Prepared By: DAN HARRISON
Date: 05/07/93
IEB Investigator:
IEB BF Date

Approving Officer BARRIE REYNOLDS
Date: 05/07/93
Reviewing Officer:
Date

Specify number(s) for routing Original [ ] [ ] [ ] [ ]
Specify number(s) for copy distribution [ ] [ ] [ ] [ ] [ ]
Continued [ ] Yes

1. Investigator/E.O.
2. D. O. /File
3. SAC (initial spills)
4. Reg. Dir. /_____ Mgr.
5. IEB Reg. Spv
6. IEB H.O./file
7. Other _____

SAC Action Class: 1:25 2: 16

Material 1: GASOLINE
Amount : 4 L
Code : 12
UN No.: 1203
Material 2:
Amount :
Code :
UN No.:
Material 3:
Code :

Amount :

UN No.:

Cause. . . . . :

Code. . : 10

Reason. . . . . :

Code. . : 02

Person in Control: QUEENSWAY TANK LINES

Waste GenNum :

Owner . . . . . : QUEENSWAY TANK LINES

Waste GenNum :

Agencies Involved . . . . :

Clean up and Restoration Carried out by:

[v] Controller	[v] Owner	[N] Other
Y	Y	

% Cleaned up: 99

Estimated Cost:

Were Directions or Approval Given Under

EPA Part X [v]	Regulation 362 [v]	Manifest No.
N	N	

Waste Class :

Code . . : 000

Hauler :

Code . . :

Disposal Site :

Code . . :

Environmental Impact:

Nature of Impact:

N

Code . . :

People/Business Damaged

(Other than to Owner/Controller) :

Nature of Damage:

Code . . :

APPENDIX H

Technical Standards and Safety Authority Records

14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario
Canada M8X 2X4
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

www.tssa.org

Tel: (416) 734-3586
Fax: (416) 734-3568

21 May 2015
File No: FS 49386

Fabienne Etienne
SNC-LAVALIN INC
20 DeBoers Drive
Suite 200
TORONTO ON M3J 0H1

Dear Fabienne:

RE: 1545 Woodroffe Avenue, Nepean, Ontario

This is with reference to your request and fee of $50.00 + HST, for information on the above location.

Enclosed are computerised screen prints showing an active self-serve gas station and an active cylinder exchange facility along with equipment details showing underground fuel storage tank details. Copies of the inspection reports and environmental consultant reports are also enclosed. **Please be advised that this site is currently under environmental review with TSSA.**

After a search of our files, TSSA has no record of any further outstanding instructions, incident reports, fuel oil spills, or contamination records respecting the above-mentioned property.

This is all the information the Fuels Safety Division has at this time regarding the above address.

It should be noted that the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990 or furnace oil tanks prior to May 1, 2002. Also note that the Fuels Safety Division does not register waste oil tanks in apartments, office buildings, residences etc. or ABOVEGROUND gas or diesel tanks.

TSSA does not make any representations or warranties with respect to the accuracy or completeness of any records released by TSSA, and the user assumes all risk in using or relying on released records.

Yours truly,

Sarah Quibell
Public Information Agent

ORACLE **Installed Base**

Navigator Favorites Home Profile Sign Out Help

Item Instances

General
Additional Attributes
Assets
Party Relationships
Owner
Parties
Accounts
Contacts
Summary
Pricing
Counters
Contracts
Notes
Transactions
Service Requests
Repair Orders
History
Operating Units
Configuration

Quick Find Item Instance Go Advanced Search

Logged In As SQUIBELL

Item Instance Details

Item Instance: 9735974
Item: FS GASOLINE STATION - SELF SERVE
Item Description: FS Gasoline Station - Self Serve

General Attributes

Organization Name TSSA Item Master
Instance Name
Last Version Label 1
Version Label Date 19-JUL-2000 20:15
Revision
New Version Label
System Go
External Reference
Item Instance Type
Accounting Classification Customer Product
Operational Status Not Used
Lot Number : not lot-controlled
Status Active
Condition
Quantity 1
UOM Each
Start Date 19-JUL-2000
Start Time 20:15
Shipped On Date
Shipped On Time
End Date
End Time
Return By Date
Return By Time
Actual Return Date
Actual Return Time

* Indicates required field.
Time format is HH24:MM
Note: You do not have permission to make updates in this page.

Creation Completed

Owner

Party Type Party
Party Name: 6161278 CANADA INC
Party Number: 874650
Account Number: 391152
Account Name 6161278 CANADA INC

Current Location

* Type Party Site Go
Party Name 6161278 CANADA I Go
Party Number 874650 Go
*Line 1 1545 WOODROFFE Go
Site Number 733397 Go
Address 1545 WOODROFFE AVE
NEPEAN, K2G 1W2, CA

Installed At

Installed Date 19-JUL-2000
Installed Time 20:15
Time format is HH24:MM
Change in installed date does not change contract date.
Type Go

Order

Sales Order Number
Sales Order Date
Sales Order Line

Purchase Order Number

Agreement Name

Item Flags

- [x] BOM Enabled
- [x] IB Trackable
- [ ] Inventory Trackable
- [x] Sellable
- [ ] Shippable

Item Views

- [ ] Merchant
- [x] Customer

Descriptive Flexfields

Context Value: FS Facility

Select Context Value and click 'Go' to show relevant fields.

Facility Type 2:

Facility Type 3:

Total Capacity - Liquid Fuel Tanks (L): 175000

Total Capacity - Propane Tank s (USWG):

* Previous Facility Type:

Previous Instance Number:

Copyright 2006, Oracle Corporation. All rights reserved.

ORACLE **Installed Base**

Item Instances

Contracts

Item Instance: 9735974
Item: FS GASOLINE STATION - SELF SERVE
Item Description: FS Gasoline Station - Self Serve

Contract Number	Coverage Name	Coverage Description	Service Name	Service Description	Warranty	Modifier Number	Status	Start Date	End Date	Termination Date
0076593938-C	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS GASOLINE STATION-SELF SERVE LIC	Fuels Safety Licence - Gasoline Station - Self Serve	N	23	Expired	01-APR-2009	31-MAR-2010	
0076593938-C	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS PRO INSP GASOLINE	Fuels Safety - Pro-rated Inspection	N	23	Expired	01-APR-2009	31-MAR-2010	
0076593938-C	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS GASOLINE STATION-SELF SERVE LIC	Fuels Safety Licence - Gasoline Station - Self Serve	N	30-JAN-10 17:34:19	Expired	01-APR-2010	31-MAR-2011	
0076593938-C	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS PRO INSP GASOLINE	Fuels Safety - Pro-rated Inspection	N	30-JAN-10 17:34:19	Expired	01-APR-2010	31-MAR-2011	
0076593938-C	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS GASOLINE STATION-SELF SERVE LIC	Fuels Safety Licence - Gasoline Station - Self Serve	N	30-JAN-11 17:38:20	Terminated	01-APR-2011	31-MAR-2012	14-DEC-2011
0076593938-C	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS PRO INSP GASOLINE	Fuels Safety - Pro-rated Inspection	N	30-JAN-11 17:38:20	Terminated	01-APR-2011	31-MAR-2012	14-DEC-2011
000187218	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS GASOLINE STATION-SELF SERVE LIC	Fuels Safety Licence - Gasoline Station - Self Serve	N		Expired	21-DEC-2011	20-DEC-2012	
000187218	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS PRO INSP GASOLINE	Fuels Safety - Pro-rated Inspection	N		Expired	21-DEC-2011	20-DEC-2012	
000187218	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS GASOLINE STATION-SELF SERVE LIC	Fuels Safety Licence - Gasoline Station - Self Serve	N	21-OCT-12 17:36:21	Expired	21-DEC-2012	20-DEC-2013	
000187218	Fuels Safety Licence-Facility-Liquid	Fuels Safety Licence-Facility-Liquid	FS PRO INSP GASOLINE	Fuels Safety - Pro-rated Inspection	N	21-OCT-12 17:36:21	Expired	21-DEC-2012	20-DEC-2013	

	Fuels	Fuels								
000187218	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS GASOLINE STATION-SELF SERVE LIC	Fuels Safety Licence - Gasoline Station - Self Serve	N	21-OCT-13 17:32:05	Expired	21-DEC-2013	20-DEC-2014	
000187218	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS PRO INSP GASOLINE	Fuels Safety - Pro-rated Inspection	N	21-OCT-13 17:32:05	Expired	21-DEC-2013	20-DEC-2014	
000187218	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS GASOLINE STATION-SELF SERVE LIC	Fuels Safety Licence - Gasoline Station - Self Serve	N	21-OCT-14 17:35:32	Active	21-DEC-2014	20-DEC-2015	
000187218	Fuels Safety Licence-Facility-Liquid Fuels	Fuels Safety Licence-Facility-Liquid Fuels	FS PRO INSP GASOLINE	Fuels Safety - Pro-rated Inspection	N	21-OCT-14 17:35:32	Active	21-DEC-2014	20-DEC-2015	

Item Instances Home Profile Sign Out Help

Copyright 2006, Oracle Corporation. All rights reserved.

Installed Base

Item **FS LIQUID FUEL TANK**

Item Description **FS Liquid Fuel Tank**

System

Owner **6161278 CANADA INC**

Account Number **391152**

Other Item Instance Details

- Transaction History
- Item Instance History
- Operating Units
- Contracts
- Orders
- Service Requests
- Orders and Directives
- View Relationship Graphically
- OMS Orders

General | **Location** | **Associations** | **Configuration** | **Counters** | **Notes**

External Reference		New Version Label	
Organization	**TSSA Item Master**	Last Version Label	**1**
Revision		Creation Date	**04-May-2009 00:00:00**
Instance Name		Status	**Active**
Quantity	**1**	Install Date	**04-May-2009 00:00:00**
UOM	**Each**	Expiration Date	
Item Instance Type		Shipped On Date	
Item Condition		Return By Date	
Accounting Classification	**Customer Product**	Actual Return Date	
Operational Status Code	**Not Used**		

Hide Instance Flex Fields

Show Additional Attributes

Fuel Type1	**Gasoline** Gasoline
Fuel Type2	
Fuel Type3	
Capacity (L)	**50000**
Tank Material	**Fiberglass (FRP)** Fiberglass (FRP)
Tank Type	**Double Wall UST** Double Wall UST
FS Corrosion Protection	
Overfill Protection Type	
Installation Year	**2009**
ULC Standard	
Manufacturer	
Model	
Serial Number	
Description	**2009VBS**

Copyright (c) 2006, Oracle. All rights reserved.

Installed Base

Item **FS LIQUID FUEL TANK**

Item Description **FS Liquid Fuel Tank**

System Owner **6161278 CANADA INC**

Account Number **391152**

Other Item Instance Details

- Transaction History
- Item Instance History
- Operating Units
- Contracts Orders
- Service Requests
- Orders and Directives
- View Relationship Graphically
- OMS Orders

General | **Location** | **Associations** | **Configuration** | **Counters** | **Notes**

External Reference		New Version Label	
Organization	**TSSA Item Master**	Last Version Label	**1**
Revision		Creation Date	**04-May-2009 00:00:00**
Instance Name		Status	**Active**
Quantity	**1**	Install Date	**04-May-2009 00:00:00**
UOM	**Each**	Expiration Date	
Item Instance Type		Shipped On Date	
Item Condition		Return By Date	
Accounting Classification	**Customer Product**	Actual Return Date	
Operational Status Code	**Not Used**		

Hide Instance Flex Fields

Show Additional Attributes

Fuel Type1	**Gasoline** Gasoline
Fuel Type2	
Fuel Type3	
Capacity (L)	**50000**
Tank Material	**Fiberglass (FRP)** Fiberglass (FRP)
Tank Type	**Double Wall UST** Double Wall UST
FS Corrosion Protection	
Overfill Protection Type	
Installation Year	**2009**
ULC Standard	
Manufacturer	
Model	
Serial Number	
Description	**2009VBS**

Copyright (c) 2006, Oracle. All rights reserved.

Installed Base

Item	**FS LIQUID FUEL TANK**	System Owner	**6161278 CANADA INC**
Item Description	**FS Liquid Fuel Tank**	Account Number	**391152**

Other Item Instance Details

Transaction History
Item Instance History
Operating Units
Contracts
Orders
Service Requests
Orders and Directives
View Relationship Graphically
OMS Orders

General | **Location** | **Associations** | **Configuration** | **Counters** | **Notes**

External Reference		New Version Label	
Organization	**TSSA Item Master**	Last Version Label	**1**
Revision		Creation Date	**04-May-2009 00:00:00**
Instance Name		Status	**Active**
Quantity	**1**	Install Date	**04-May-2009 00:00:00**
UOM	**Each**	Expiration Date	
Item Instance Type		Shipped On Date	
Item Condition		Return By Date	
Accounting Classification	**Customer Product**	Actual Return Date	
Operational Status Code	**Not Used**		

Hide Instance Flex Fields

Show Additional Attributes

Fuel Type1	**Diesel** Diesel
Fuel Type2	
Fuel Type3	
Capacity (L)	**25000**
Tank Material	**Fiberglass (FRP)** Fiberglass (FRP)
Tank Type	**Double Wall UST** Double Wall UST
FS Corrosion Protection	
Overfill Protection Type	
Installation Year	**2009**
ULC Standard	
Manufacturer	
Model	
Serial Number	
Description	**2009VBS**

Copyright (c) 2006, Oracle. All rights reserved.

Installed Base

Item **FS LIQUID FUEL TANK**

Item Description **FS Liquid Fuel Tank**

System Owner **6161278 CANADA INC**

Account Number **391152**

Other Item Instance Details

- Transaction History
- Item Instance History
- Operating Units
- Contracts
- Orders
- Service Requests
- Orders and Directives
- View Relationship Graphically
- OMS Orders

General | **Location** | **Associations** | **Configuration** | **Counters** | **Notes**

External Reference		New Version Label	
Organization	**TSSA Item Master**	Last Version Label	**1**
Revision		Creation Date	**04-May-2009 00:00:00**
Instance Name		Status	**Active**
Quantity	**1**	Install Date	**04-May-2009 00:00:00**
UOM	**Each**	Expiration Date	
Item Instance Type		Shipped On Date	
Item Condition		Return By Date	
Accounting Classification	**Customer Product**	Actual Return Date	
Operational Status Code	**Not Used**		

Hide Instance Flex Fields

Show Additional Attributes

Fuel Type1	**Gasoline** Gasoline
Fuel Type2	
Fuel Type3	
Capacity (L)	**50000**
Tank Material	**Fiberglass (FRP)** Fiberglass (FRP)
Tank Type	**Double Wall UST** Double Wall UST
FS Corrosion Protection	
Overfill Protection Type	
Installation Year	**2009**
ULC Standard	
Manufacturer	
Model	
Serial Number	
Description	**2009VBS**

Copyright (c) 2006, Oracle. All rights reserved.

PARSONS
3715 Laird Road, Suite 100 • Mississauga, ON L5L 0A3 • (905) 820-1210 • Fax (905) 820-1221 • www.parsons.com

September 8, 2014

Ref. No.: 10-8518T02

Technical Standards & Safety Authority
3300 Bloor Street West
14th Floor, Centre Tower
Toronto, Ontario
M8X 2X4

Attention: Stephen Hoyle

Dear Mr. Hoyle:

Re: Environmental Reports
1545 Woodroffe Avenue
Ottawa, Ontario

On behalf of Imperial Oil, and in accordance with the TSSA Environmental Management Protocol for Fuel Handling Sites in Ontario (TSSA EMP-2012) and in accordance with the Contaminant Management Plan (CMP) for the above referenced Site, dated February 21, 2013, please find attached a CD-ROM with an electronic copy of the following reports:

- *2014 Groundwater Monitoring and Sampling Data Package, 1545 Woodroffe Avenue, Ottawa, Ontario*, dated September 4, 2014, by Parsons Canada Ltd.
- *2014 Groundwater Monitoring and Sampling Data Package, Boulevard Adjacent 1545 Woodroffe Avenue, Ottawa, Ontario*, dated September 4, 2014, by Parsons Canada Ltd.

In regards to the Site activities, the delineating monitoring wells along Woodroffe Avenue (i.e. BH201 and BH202) were paved over and are no longer accessible. As per the CMP, these monitoring wells are required to be monitored and sampled annually. However, in 2015, the Site is scheduled for significant redevelopment and a source removal of impacted soil will be completed concurrently with the construction activities. With respect to BH201 and BH202, Imperial Oil is planning to continue to follow the existing CMP and monitor and sample the remaining accessible wells until after the construction activities are completed. Once construction activities are completed, the CMP will be reviewed and revised, as required, including replacing the monitoring wells on Woodroffe Avenue, if necessary.

We trust that the foregoing information is satisfactory for your present requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

PARSONS

Holly Losignore, B.Sc.

John Halstead, M.Sc., P.Geo.

HNL:elh

Distribution: (1) Addressee
(1) Lorne Wedge, Imperial Oil Environmental Services

PARSONS
3715 Laird Road, Suite 100 • Mississauga, ON L5L 0A3 • (905) 820-1210 • Fax (905) 820-1221 • www.parsons.com

September 4, 2014

Ref. No.: 10-8518T02

Imperial Oil Environmental Services
1 Duncan Mill Road
North York, Ontario
M3B 1Z2

These documents and the information contained therein are confidential, property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch. II "1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch. I "1", as such legislation may be amended from time to time.

Title: 2014 Groundwater Monitoring and Sampling Data Package
Site Address: 1545 Woodroffe Avenue, Ottawa, Ontario
SAP Site Location Number: 88001626
Stripes Applicant Number: MZ.00151
Facility Type: Esso Retail Fuel Outlet
Limitation of Liability, Scope of Report and Third Party Reliance: Appendix A

Sampling Events: June 2014

Scope of Work

- Monitor all accessible monitoring wells for subsurface vapour concentrations, water levels, and the presence or absence of light non-aqueous phase liquids (free product) during the sampling event.
- Collect groundwater samples from selected accessible wells (specifically: BH5, BH7, BH8, BH-10, BH11, BH12, and BH-13 to BH-16) for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX); petroleum hydrocarbon (PHC) fractions F1 to F4; lead; and selected or full suite volatile organic compounds (VOCs).
- Compare the groundwater analytical results to the applicable MOE April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. Specifically, the Table 3 generic site condition standards for non-potable groundwater conditions, medium and fine textured soils, and all types of property use were selected. The previous groundwater analytical results, collected prior to July 1, 2011, were compared to the MOE March 9, 2004 Table 3 (non-potable) site condition standards with the same conditions noted above.
- Remove any free product from monitoring wells through manual bailing.

Results

- Groundwater Monitoring (Date; Stratigraphic Unit; Depth to Groundwater Range; Groundwater Direction)
  ➢ June 16, 2014; shallow overburden; 3.50 mbgs to 5.28 mbgs; southwest (Drawing No. 1 and Table 1)

- Monitoring Well Headspace Vapour (Date; Range)
  ➢ June 16, 2014; 10 ppmv to >100 %LEL (Table 1)

- Free Product Occurrence (Date; Observations)
  ➢ June 16, 2014; sheen in BH12 (Table 2 and Drawing No. 2)

- Free Product Removal
  - A total of 20 L of groundwater with a sheen was removed from monitoring well BH12 by manual bailing. The waste was disposed off-site in June at an MOE approved waste receiving facility (Tomlinson Environmental Services, in Ottawa, Ontario, Certificate of Approval A460716)

- Groundwater Analytical Exceedances (Date; Wells)
  - June 16-18, 2014: BH5, BH8, BH-10, BH11, BH12, and BH-13 (Tables 2 and 3 and Drawing No. 2)

Methodology

Subsurface Vapour Concentrations

Immediately after removing the well caps, the maximum subsurface vapour concentrations in the wells were measured using a RKI Eagle combustible gas detector that was operated in methane elimination mode. The collection tube of the combustible gas detector was inserted into the riser pipes and the peak instrument reading recorded.

Combustible Gas Detector Calibrations

The RKI Eagle calibration was checked daily in the field, by checking the instrument response against a nominal 43 %LEL concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument reading was within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if the reading was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field until the instrument read within ±10% of the gas standard.

Depth to Groundwater and Free Product Thickness

The depth to the water table and presence or absence of free product in the wells were determined with a Heron H.OIL interface probe that was cleaned with soapy water, then rinsed with distilled water, between monitoring wells.

Low-Flow Sampling Methodology

All samples were collected using low-flow sampling (specifically, BH5, BH7, BH8, BH-10, BH11, BH12, and BH-13 to BH-16). A variable-flow peristaltic pump was used to remove groundwater from the mid-point of the monitoring well screened zone. The pump was connected to a flow-through cell equipped with a YSI multimeter (Horiba U-22) probe that measured pH, temperature, electrical conductivity, dissolved oxygen (DO), reduction oxidation potential (REDOX), and turbidity. During low-flow purging, the water level in each well was continually monitored and the purging rate was adjusted such that the overall drawdown from the static groundwater level did not exceed approximately 10 cm. The purging rates ranged from approximately 100 mL/min to 140 mL/min. The groundwater sample was collected when the pH (± 0.1 pH Units), temperature (± 3%), electrical conductivity (± 3%), DO (± 10%), REDOX (± 10 mV), and turbidity (± 10%) measurements stabilized, over three consecutive readings, taken at a minimum rate of at least one per every flow-through cell volume.

The pump and flow-through cell were connected to the wells with polyethylene and silicone tubing that were individually dedicated to each monitoring well. The groundwater samples were collected using the dedicated tubing.

Laboratory Analysis of Samples

Samples were collected in the appropriate sample containers, using the appropriate preservatives. All sample bottles were supplied by the laboratory. The groundwater samples were placed in coolers with ice immediately after they were collected. The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam's Mississauga facility is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA). Analytical methods used are referenced in the certificates of analysis presented in Appendix B.

Quality Assurance and Quality Control Results

The laboratory and field QA/QC discussions are presented in Appendix C. In summary, no QA/QC issues were identified that would materially affect the overall conclusions of the groundwater monitoring and sampling assessment presented in this report.

Closure

We trust the foregoing information is satisfactory for your requirements.

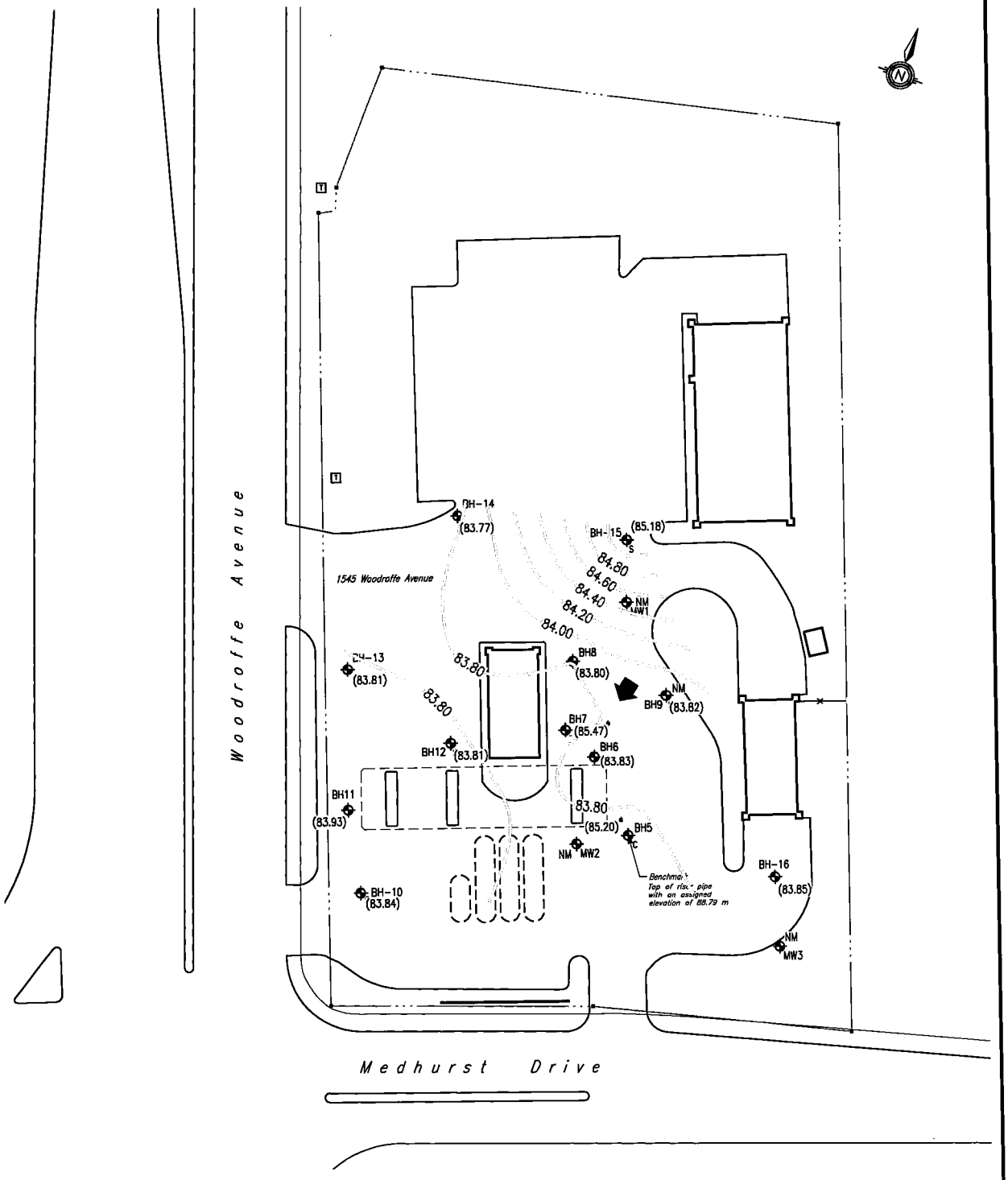
PARSONS CANADA LTD.

Holly Losignore, B.Sc.

John Halstead, M.Sc., Geo.

Distribution: (1) Imperial Oil Environmental Services
(1) Technical Standard and Safety Authority (cd)

W:\8000-999\8518#00\8518#02\8518T0214.L02(P2)jf.docx



LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- 2010/12/31 — Date Format: yyyy/mm/dd
- Inferred Direction of Groundwater Flow
- 49.00 — Potentiometric Surface Contour with Elevation, metres
- (49.00) — Potentiometric Surface Elevation, metres
- (49.00)* — Value Not Used for Contouring
- NM — Well Not Monitored

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

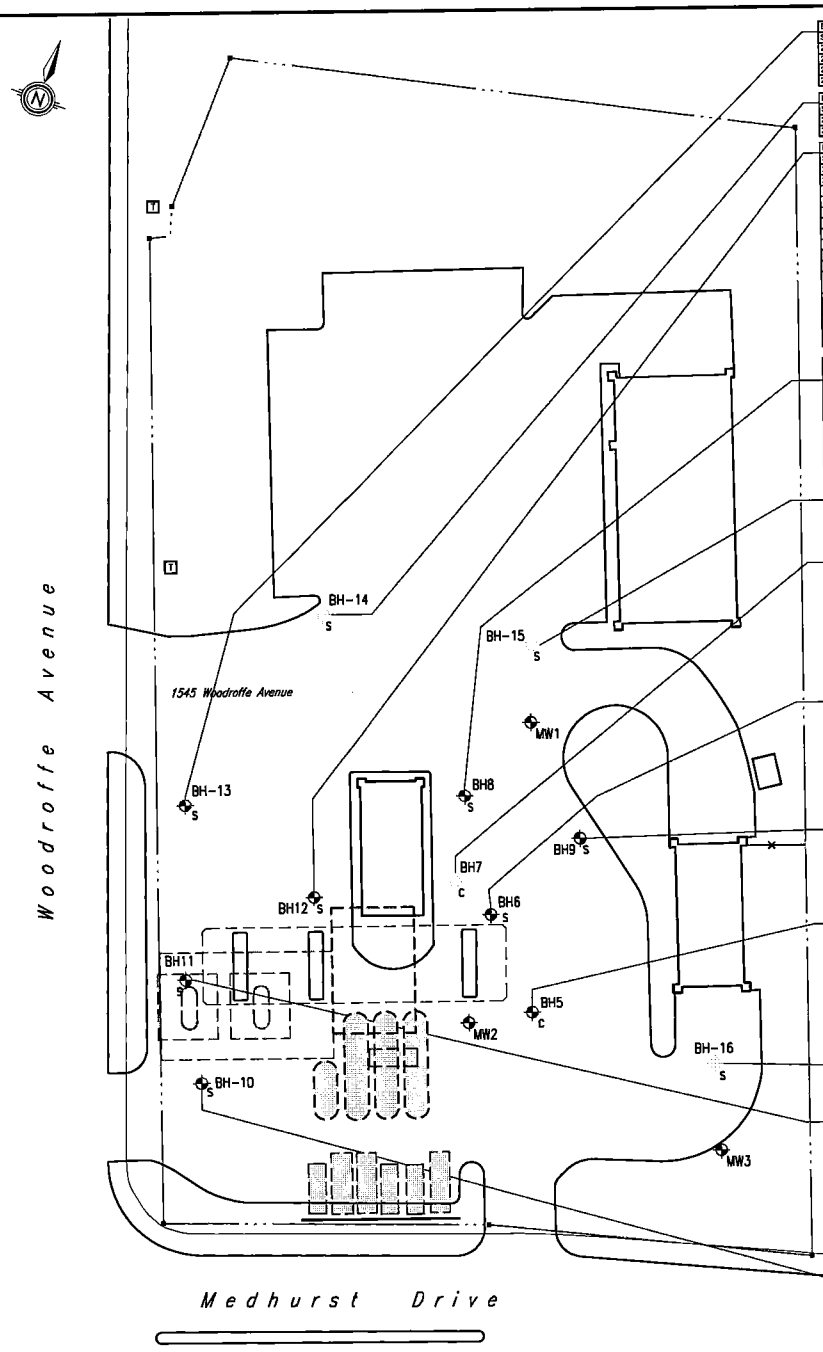
0 5 10 15 20 25m

Original Scale 1:500

Elevation of the Groundwater Potentiometric Surface
2014/06/16
Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: DLP	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518M141	Date: 2014/08/20
PARSONS		Drawing No.: 1

Rel:5-34-P



BH-13 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	4.1	52	340	730	930	270	<100	<100	-	<0.5
2012/06/13	9.3	69	760	1100	2600	540	<100	<100	17	0.57
2013/10/17	34	7.8	260	240	780	330	<200	<200	-	<0.50
2014/06/18	36	55	1000	1100	2100	1000	<200	<200	-	<0.50

BH-14 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	3.7	0.31	75	<0.40	110	<100	<100	<100	-	<0.5
2014/06/18	12	<0.20	19	<0.40	<25	<100	<200	<200	-	<2.5

BH12 — Screen Interval: 3.0 - 6.0 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	1500	230	670	280	2700	1000	<100	<100	-	<0.5
2010/03/16 (QA1)	1400	220	630	270	2600	1100	<100	<100	-	<0.5
2010/06/03	1800	3100	860	3100	9300	5000	1500	<100	-	0.8
2010/06/03 (DUP1)	1700	3000	820	3000	8500	8300	2400	<100	-	0.8
2010/07/23	2500	3400	1300	4100	9000	6700	2400	<100	-	<0.5
2010/07/23 (DUP1)	2500	3300	1200	4100	7800	5600	1400	<100	-	<0.5
2010/11/17	1600	2800	1100	3300	4000	7400	2600	<100	-	<0.5
2010/11/17 (DUP-1)	1400	2500	1100	3100	3200	5500	1600	<100	-	<0.5
2011/06/27						73				
2011/10/31						2				
2012/06/13						Sheen				
2012/06/16	580	490	500	450	2330	1400	<100	<100	61	1.3
2013/10/17	1100	1400	1500	6000	8200	7600	1900	<200	-	<0.50
2013/10/17 (DUP-1)	1200	1500	1600	6100	7700	3150	320	<200	-	0.53
2014/06/16						Sheen				
2014/06/18	2600	3000	860	2500	3100	3200	710	920	-	1.4
2014/06/18 (DUP-31)	2900	3100	910	2600	4000	2900	950	920	-	1.4

BH8 — Screen Interval: 4.5 - 6.0 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	140	10	610	160	910	460	<100	110	-	<0.5
2010/06/03	230	48	1200	1100	1400	550	<100	<100	-	<0.5
2010/07/23	260	15	820	390	2300	1400	<100	<100	-	<0.5
2010/11/17	130	17	780	370	2400	660	<100	<100	-	<0.5
2011/06/27	57	5.7	400	37	960	480	<100	<100	-	<0.5
2011/10/31	16	4.5	140	8.1	460	230	<100	<100	-	<0.5
2011/10/31 (DUP-2)	17	4.8	150	9.2	600	240	<100	<100	-	<0.5
2012/06/15	46	3.7	510	34	1300	820	<100	<100	<10	<0.50
2014/06/17	46	5.5	400	180	860	520	<200	<200	-	<0.50

BH-15 — Screen Interval: 3.0 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2013/10/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50
2014/06/18	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50

BH7 — Screen Interval: 2.0 - 4.7 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2009/12/11 (low flow)	<0.2	1.3	0.8	5.2	<100	<100	<100	<100	-	1.0
2010/03/16	<0.2	<0.2	<0.2	0.8	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/11/17	<0.2	<0.2	0.2	0.6	<100	<100	200	140	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	330	<100	-	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2012/06/13	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	0.77
2013/10/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50
2014/06/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50

BH6 — Screen Interval: 2.0 - 4.7 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2009/12/11 (low flow)						Sheen				
2010/03/16	450	47	1500	3500	5600	650	2100	730	-	<0.5
2010/06/03	330	140	1900	5100	8700	2600	420	270	-	<0.5
2010/07/23	29	13	83	240	250	3000	280	150	-	<0.5
2010/11/17	38	30	860	2500	4900	2400	780	430	-	<0.5
2011/06/27	260	71	1500	3600	6700	2500	450	190	-	<0.5
2011/06/27 (DUP-101)	250	66	1300	3400	6000	2600	330	120	-	<0.5
2011/10/31	445	74	2500	5200	7800	2300	<100	<100	-	<0.5
2012/06/14	210	41	1700	4200	7600	2900	<100	<100	75	0.67

BH9 — Screen Interval: 5.8 - 7.3 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	<0.2	0.3	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	0.4	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/11/17	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5

BH5 — Screen Interval: 1.8 - 4.6 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2009/12/11 (low flow)	41	61	2300	8500	9100	1200	<100	<100	-	<0.5
2010/03/16	<4	9	2800	9600	11 000	4900	240	<100	-	<0.5
2010/06/03	<10	<10	2200	6900	7600	4600	200	<100	-	<0.5
2010/07/23	17	<10	1400	3800	7400	2600	280	<100	-	<0.5
2010/11/17	25	<4	1400	3500	4900	3600	<100	<100	-	<0.5
2011/06/27	10	3	1900	5500	17 000	6500	200	<100	-	<0.5
2011/11/01	48	<2.0	1400	3100	5000	2700	<100	<100	-	-
2012/06/13	80	9.5	2000	4200	9600	3100	<100	<100	<50	-
2013/10/17	32	2.9	820	2300	7000	482	670	460	-	<0.50
2014/06/18	120	8.8	1500	5000	9800	3700	<200	<200	-	0.95

BH-16 — Screen Interval: 2.9 - 5.9 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2012/06/13	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50
2012/06/13 (DUP-3)	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50
2014/06/18	<0.20	<0.20	<0.20	<0.40	390	<100	<200	<200	-	<0.50

BH11 — Screen Interval: 3.1 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	6.7	14	20	200	850	460	<100	<100	-	<0.5
2010/06/03	2.0	9.8	23	140	500	110	<100	<100	-	<0.5
2010/07/23	3.0	11	31	210	450	140	<100	<100	-	<0.5
2010/11/17	9.1	2.8	44	43	560	210	<100	<100	-	<0.5
2011/06/27	96	710	540	2300	4700	1300	<100	<100	-	3.6
2011/10/31	7.9	10	27	180	610	240	<100	<100	-	<0.5
2012/06/13	64	4.2	87	47	290	120	<100	<100	<5.0	0.62
2013/10/16	110	370	820	3100	5400	700	<200	<200	-	<0.50
2014/06/16	110	270	570	2200	4300	2100	<200	<200	-	4.5

BH-10 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	10	0.27	2.8	0.87	<25	<100	<100	<100	-	<0.5
2012/06/13	75	2.7	130	42	330	200	<100	<100	<5.0	<0.50
2013/10/16	96	25	700	580	1400	970	<200	<200	-	<0.50
2014/06/17	120	14	680	810	4700	950	<200	<200	-	<0.50

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Transformer (Pad Mounted)
- Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/L — Micrograms Per Litre

Analytical Results

- All Results Reported in µg/L
- Location Where Most Recent Groundwater Sample Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where Most Recent Groundwater Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where No Groundwater Sample Was Submitted From the Most Recent Sampling Event, Shown in Black
- Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple
- 1234 — Exceedances of Standards, Shown in Red and Bold
- 1234, Sheen — Free Product Apparent Thickness (in millimetres), or Sheen, Shown in Purple and Bold
- DUP — Field Duplicate Sample
- – — Not Analyzed
- < — Result Less Than Reportable Detection Limit

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/L	12 000	37 000	50 000	35 000	NS	NS	NS	NS	NS	32
Standard** µg/L	430	18 000	2300	4200	750	150	500	500	520	25

B-Benzene T-Toluene E-Ethylbenzene X-Total Xylenes F1-F4-CCME CWS Petroleum Hydrocarbon Fractions Hx-Hexane Pb-Lead

* MOE Table 3 (2004) All types of property use, medium and fine textured soils

** MOE Table 3 (2011) All types of property use, medium and fine textured soils.

NS No standard

0 5 10 15 20 25m

Original Scale 1:500

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead
Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: VM	Page Size: 11 x 17 In	Ref. No.: 10-8518T02
Reviewed: HM	File No.: 8518G139	Date: 2014/08/22
PARSONS		Drawing No.: 2

Ref: 5-34-P

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH1	88.51	88.61	1.8 - 4.3	2008/11/19	>100%	DRY	DRY	DRY
				2008/12/11	45%	DRY	DRY	DRY
				2009/05/12	AW	AW	AW	AW
BH2	88.33	88.51	1.5 - 4.3	2008/11/19	325	ND	4.25	84.26
				2008/12/11	175	ND	3.40	85.11
				2009/05/12	AW	AW	AW	AW
BH3	88.50	88.63	4.6 - 6.1	2008/11/19	70%	ND	4.98	83.65
				2008/12/11	>100%	ND	4.95	83.69
				2009/05/12	AW	AW	AW	AW
BH4	88.62	88.72	4.2 - 6.1	2008/11/19	170	ND	5.06	83.65
				2008/12/11	5%	ND	5.04	83.68
				2009/05/12	AW	AW	AW	AW
BH5	88.79	88.85	1.8 - 4.6	2008/11/19	20%	ND	4.37	84.48
				2008/12/11	20%	ND	4.13	84.72
				2009/05/12	95	ND	3.17	85.68
	88.79	88.92		2010/03/16	75	ND	3.32	85.60
				2010/06/03	5%	ND	3.93	84.99
				2010/07/23	10%	ND	4.11	84.81
				2010/11/17	5%	ND	4.06	84.86
				2011/06/27	5%	ND	3.34	85.58
				2011/10/31	8%	ND	4.32	84.60
				2012/06/13	23%	ND	4.18	84.75
				2013/10/17	120	ND	4.33	84.59
				2014/04/07	NM	NM	NM	NM
				2014/06/16	30%	ND	3.72	85.20
BH6	88.77	88.89	2.0 - 4.7	2008/11/19	25%	ND	5.25	83.63
				2008/12/11	>100%	Sheen	5.23	83.66
				2009/05/12	11%	ND	4.99	83.90
	88.82	88.95		2010/03/16	25%	ND	5.09	83.86
				2010/06/03	>100%	ND	5.11	83.84
				2010/07/23	5%	ND	5.21	83.74
				2010/11/17	>100%	ND	5.11	83.84
				2011/06/27	>100%	ND	4.93	84.02
				2011/10/31	5%	ND	5.28	83.67
				2012/06/13	40%	ND	5.33	83.62
				2013/10/17	NM	NM	NM	NM
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	ND	5.12	83.83
BH7	88.87	88.94	2.0 - 4.7	2008/11/19	150	ND	3.86	85.07
				2008/12/11	225	ND	3.67	85.26
				2009/05/12	160	ND	3.14	85.79
	88.85	88.97		2010/03/16	50	ND	3.31	85.67
				2010/06/03	75	ND	3.55	85.42
				2010/07/23	100	ND	3.70	85.27
				2010/11/17	150	ND	3.60	85.37
				2011/06/27	120	ND	3.34	85.64
				2011/10/31	180	ND	3.99	84.98
				2012/06/13	150	ND	3.79	85.18
				2013/10/17	75	ND	4.08	84.89
				2014/04/07	NM	NM	NM	NM
				2014/06/16	10	ND	3.50	85.47

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH8	88.88	89.00	4.5 - 6.0	2010/03/16	75	ND	5.14	83.86
				2010/06/03	75	ND	5.18	83.82
				2010/07/23	150	ND	5.28	83.72
				2010/11/17	150	ND	5.18	83.82
				2011/06/27	140	ND	5.00	84.00
				2011/10/31	175	ND	5.35	83.66
				2012/06/13	5%	ND	5.41	83.60
				2013/10/17	>100%	DRY	DRY	DRY
				2014/04/07	NM	NM	NM	NM
				2014/06/16	88%	ND	5.20	83.80
BH9	88.97	89.10	5.8 - 7.3	2010/03/16	25	ND	5.23	83.87 *
				2010/06/03	25	ND	5.27	83.83 *
				2010/07/23	25	ND	5.37	83.73 *
				2010/11/17	50	ND	5.27	83.83 *
				2011/06/27	<5	ND	5.09	84.01 *
				2011/10/31	60	ND	5.43	83.67 *
				2012/06/13	80	ND	5.49	83.61 *
				2013/10/17	NM	NM	NM	NM
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	ND	5.28	83.82 *
BH10	88.47	88.56	1.5 - 4.1	2010/03/16	50	DRY	DRY	DRY
				2010/06/03	100	DRY	DRY	DRY
				2010/07/23	100	DRY	DRY	DRY
				2010/11/17	150	DRY	DRY	DRY
				2011/06/27	80	DRY	DRY	DRY
	88.46	88.56	3.7 - 6.1	2011/10/31	13%	ND	4.87	83.69
				2012/06/13	20%	ND	4.94	83.62
				2013/10/16	37%	ND	5.71	82.85
				2014/04/07	35%	NA	NA	NA
				2014/06/16	>100%	ND	4.72	83.84
BH11	88.43	88.57	3.1 - 6.1	2010/03/16	5%	ND	4.70	83.87
				2010/06/03	500	ND	4.72	83.85
				2010/07/23	15%	ND	4.82	83.75
				2010/11/17	15%	ND	4.73	83.84
				2011/06/27	325	ND	4.44	84.13
	88.53	88.57		2011/10/31	16%	ND	4.79	83.78
				2012/06/13	22%	ND	4.86	83.71
				2013/10/16	27%	ND	5.65	82.92
				2014/04/07	20%	ND	5.09	83.48
				2014/06/16	>100%	ND	4.64	83.93
BH12	88.74	88.82	3.0 - 6.0	2010/03/16	>100%	ND	4.97	83.86
				2010/06/03	225	ND	4.99	83.83
				2010/07/23	>100%	ND	5.09	83.73
				2010/11/17	>100%	ND	5.00	83.82
				2011/06/27	>100%	73 (4)	4.80	84.02
				2011/10/31	240	2 (0)	5.15	83.67
				2012/06/13	100%	Sheen	5.22	83.60
				2013/10/17	>100%	ND	5.99	82.83
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	Sheen	5.01	83.81

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH-13	88.42	88.49	3.7 - 6.1	2011/10/31	17%	ND	3.83	84.65
				2012/06/13	40%	ND	4.90	83.59
				2013/10/17	50%	ND	5.69	82.80
				2014/04/07	70%	NA	NA	NA
				2014/06/16	>100%	ND	4.68	83.81
BH-14	88.77	88.85	3.7 - 6.1	2011/10/31	12%	ND	5.23	83.63
				2012/06/13	50%	ND	5.28	83.57 *
				2013/10/17	75%	ND	6.10	82.75 *
				2014/04/07	NM	NM	NM	NM
				2014/06/16	15%	ND	5.08	83.77 *
BH-15	88.83	88.94	3.0 - 6.1	2011/10/31	400	ND	5.29	83.66
				2012/06/13	215	ND	5.33	83.61 *
				2013/10/17	65	ND	5.79	83.15 *
				2014/04/07	NM	NM	NM	NM
				2014/06/16	120	ND	3.76	85.18 *
BH-16	88.80	88.95	2.9 - 5.9	2012/06/13	<5	ND	5.34	83.61
				2013/10/17	25%	ND	6.10	82.85
				2014/04/07	NM	NM	NM	NM
				2014/06/16	53%	ND	5.11	83.85

1 - Relative to local benchmark (BH5 top of riser pipe) having an elevation of 88.79 m
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75
AW - Abandoned well
m - metres
mbgs - metres below ground surface
mm - millimetres
ND - Not detected
( ) - After bailing/purging
* - Water level above top of screen

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH5	BH7	BH8	BH-10	BH11	BH12	DUP-01 FIELD DUPLICATE BH12	BH-13	BH-14	BH-15	BH-16	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4A6970	B4A4485	B4A4485	B4A4312	B4A4485	B4A6970	B4A6970	B4A7262	B4A6997	B4A7262	B4A7262	
MAXXAM Sample ID	WJ7099	002745	002747	002121	002749	WJ7100	WJ7101	WJ9442	WJ7971	WJ9443	WJ9444	
Date Sampled (yyyy/mm/dd)	2014/06/18	2014/06/17	2014/06/17	2014/06/17	2014/06/16	2014/06/18	2014/06/18	2014/06/18	2014/06/18	2014/06/18	2014/06/18	
PARAMETERS												
Benzene	120	<0.20	48	120	110	**2800**	**2900**	36	12	<0.20	<0.20	430
Toluene	8.8	<0.20	5.5	14	270	3000	3100	55	<0.20	<0.20	<0.20	18000
Ethylbenzene	1500	<0.20	400	680	570	860	910	1000	19	<0.20	<0.20	2300
Total Xylenes	**5000**	<0.40	180	810	2200	2500	2600	1100	<0.40	<0.40	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	**9800**	<25	**860**	**4700**	**4500**	**3100**	**4000**	**2100**	<25	<25	390	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	**3700**	<100	**520**	**950**	**2400**	**3200**	**2900**	**1000**	<100	<100	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	<200	<200	<200	<200	**710**	350	<200	<200	<200	<200	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	<200	<200	<200	<200	**620**	**600**	<200	<200	<200	<200	500
Lead	0.95	<0.50	<0.50	<0.50	4.5	1.4	1.4	<0.50	<2.5	<0.50	<0.50	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	BH5	BH7	BH8	BH-10	BH11	BH12	DUP-01 FIELD DUPLICATE BH12	BH-13	BH-14	BH-15	BH-16	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4A6970	B4A4485	B4A4485	B4A4312	B4A4485	B4A6970	B4A6970	B4A7262	B4A6997	B4A7262	B4A7262	
MAXXAM Sample ID	WJ7099	002745	002747	002121	002749	WJ7100	WJ7101	WJ9442	WJ7971	WJ9443	WJ9444	
Date Sampled (yyyy/mm/dd)	2014/06/18	2014/06/17	2014/06/17	2014/06/17	2014/06/16	2014/06/18	2014/06/18	2014/06/18	2014/06/18	2014/06/18	2014/06/18	
PARAMETERS												
Ethylene Dibromide	<100	<0.20	<10	<20	<40	<100	<100	<40	<0.40	<0.20	<0.20	0.83
Dichlorodifluoromethane	-	-	-	-	-	-	-	-	-	<0.50	-	4400
1,1-Dichloroethane	-	-	-	-	-	-	-	-	-	<0.10	-	3100
1,2-Dichloroethane	<100	<0.20	<10	<20	<40	<100	<100	<40	<0.40	<0.20	<0.20	12
1,1-Dichloroethylene	-	-	-	-	-	-	-	-	-	<0.10	-	17
cis-1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	<0.10	-	17
trans-1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	<0.10	-	17
Methyl t-butyl ether	<100	<0.20	<10	<20	<40	<100	<100	<40	1.9	<0.20	<0.20	1400
Tetrachloroethylene	-	-	-	-	-	-	-	-	-	<0.10	-	17
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	<0.10	-	6700
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	<0.20	-	30
Trichloroethylene	-	-	-	-	-	-	-	-	-	<0.10	-	17
Trichlorofluoromethane	-	-	-	-	-	-	-	-	-	<0.20	-	2500
Vinyl Chloride	-	-	-	-	-	-	-	-	-	<0.20	-	1.7

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils

"-" - Not analyzed

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

APPENDIX A

LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by Parsons Canada Ltd. (Parsons), for Imperial Oil. It is intended for the sole and exclusive use of Imperial Oil, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and Parsons, make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by Parsons, with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Parsons. Nothing in this report is intended to constitute or provide a legal opinion.

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-01-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071014
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4312
Received: 2014/06/18, 13:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	1	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	1	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-01-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071014
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4312
Received: 2014/06/18, 13:00

Encryption Key Kudrat Bajwa
Kudrat Bajwa
26 Jun 2014 16:33:48 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4A4312
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		002121		
Sampling Date		2014/06/17 08:20		
COC Number		473021-01-01		
	Units	**BH-10**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	0.50	3654015

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4312
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		002121		
Sampling Date		2014/06/17 08:20		
COC Number		473021-01-01		
	Units	**BH-10**	**RDL**	**QC Batch**
Benzene	ug/L	120	4.0	3650999
Toluene	ug/L	14	4.0	3650999
Ethylbenzene	ug/L	680	4.0	3650999
o-Xylene	ug/L	37	4.0	3650999
p+m-Xylene	ug/L	770	8.0	3650999
Total Xylenes	ug/L	810	8.0	3650999
F1 (C6-C10)	ug/L	6300	500	3650999
F1 (C6-C10) - BTEX	ug/L	4700	500	3650999
F2 (C10-C16 Hydrocarbons)	ug/L	950	100	3652698
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	3652698
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	3652698
Reached Baseline at C50	ug/L	Yes		3652698
Extraction Surrogate Recovery (%)				
o-Terphenyl	%	102		3652698
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	101		3650999
4-Bromofluorobenzene	%	99		3650999
D10-Ethylbenzene	%	90		3650999
D4-1,2-Dichloroethane	%	97		3650999

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4312
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		002121		
Sampling Date		2014/06/17 08:20		
COC Number		473021-01-01		
	Units	**BH-10**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<20	20	3646859
Ethylene Dibromide	ug/L	<20	20	3646859
Methyl t-butyl ether (MTBE)	ug/L	<20	20	3646859
Instrument Surrogate Recovery (%)				
4-Bromofluorobenzene	%	103		3646859
D4-1,2-Dichloroethane	%	97		3646859
D8-Toluene	%	102		3646859

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success Through Science®

Maxxam Job #: B4A4312
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: 002121
Sample ID: BH-10
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652698	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4312
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Sample 002121-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4312
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3646859	SLM	Method Blank	4-Bromofluorobenzene	2014/06/21		96	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		100	%	70 - 130
			1,2-Dichloroethane	2014/06/21	<0.20		ug/L	
			Ethylene Dibromide	2014/06/21	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/21	<0.20		ug/L	
3650999	AGA	Method Blank	1,4-Difluorobenzene	2014/06/24		99	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		101	%	70 - 130
			D10-Ethylbenzene	2014/06/24		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		98	%	70 - 130
			Benzene	2014/06/24	<0.20		ug/L	
			Toluene	2014/06/24	<0.20		ug/L	
			Ethylbenzene	2014/06/24	<0.20		ug/L	
			o-Xylene	2014/06/24	<0.20		ug/L	
			p+m-Xylene	2014/06/24	<0.40		ug/L	
			Total Xylenes	2014/06/24	<0.40		ug/L	
			F1 (C6-C10)	2014/06/24	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/24	<25		ug/L	
3652698	ZZ	Method Blank	o-Terphenyl	2014/06/24		102	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/24	<200		ug/L	
3654015	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/26	<0.50		ug/L	
3646859	SLM	LCS	4-Bromofluorobenzene	2014/06/21		102	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		102	%	70 - 130
			1,2-Dichloroethane	2014/06/21		92	%	70 - 130
			Ethylene Dibromide	2014/06/21		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/21		92	%	70 - 130
3650999	AGA	LCS	1,4-Difluorobenzene	2014/06/24		102	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		98	%	70 - 130
			D10-Ethylbenzene	2014/06/24		90	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		100	%	70 - 130
			Benzene	2014/06/24		105	%	70 - 130
			Toluene	2014/06/24		98	%	70 - 130
			Ethylbenzene	2014/06/24		108	%	70 - 130
			o-Xylene	2014/06/24		107	%	70 - 130
			p+m-Xylene	2014/06/24		99	%	70 - 130
			F1 (C6-C10)	2014/06/24		100	%	70 - 130
3652698	ZZ	LCS	o-Terphenyl	2014/06/25		108	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/25		107	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/25		113	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/25		104	%	60 - 130
3654015	PBA	LCS	Dissolved Lead (Pb)	2014/06/26		97	%	80 - 120

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4312
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 473021-01-01

473021

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~90 Wynford Dr 5th Floor Don Mills ON M3C 1K6~~ 1 Duncan Mill Rd Toronto ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca;	Email: Holly.Losignore@parsons.com;
Phone: (416) ~~447-7888~~ 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC (3)	BTEX	Petroleum Hydrocarbons F1-F4	Metals (Regd only)
1	BH-10	X				12	2014/06/18	08:30	X		✓	✓	✓	✓
2														
3														
4														
5														
6														
7														
8														
9														
10														

VOC (3): ethylene dibromide; 1,2-dichloroethane; MTBE

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO Medium ~~Medium~~ fine
☐ Other _____

SPECIAL INSTRUCTIONS:
Test samples as per TDG
ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	CUSTODY SEAL	YES	NO	TEMP	1	2	3
	PRESENT	✓			1°C	1°C	2°C
	INTACT	✓					

COOLER ID:	CUSTODY SEAL	YES	NO	TEMP	1	2	3
	PRESENT						
	INTACT						

COOLER ID:	CUSTODY SEAL	YES	NO	TEMP	1	2	3
	PRESENT						
	INTACT						

LAB USE ONLY
MAXXAM JOB # B4A4312

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Libby Kuit	2014/06/18	17:00	1.	FANG WANG	2014/06/18	13:00
2.				2.			
3.				3.			

SAMPLES
LABELED BY: HG1
VERIFIED BY: AKP

COC – 1012 (2013) IOL – ON

White: Maxxam

Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*

Sampling Date: 2014/06/17

Location: *1545 Woodroffe Avenue, Ottawa, Ontario*

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*

Laboratory Job Number: *B4A4312*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Lab Control Sample Recovery/Spiked Blank	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	*No field QC samples were submitted.*
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A*

Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*

Data Reviewed by (Signature):

Review Date: *2014/07/17*

Revision Date (if applicable):

Revised by (Signature):

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-04-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071017
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4485
Received: 2014/06/18, 13:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	3	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-04-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071017
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4485
Received: 2014/06/18, 13:00

Encryption Key Kudrat Bajwa
Kudrat Bajwa
26 Jun 2014 16:22:18 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		002745	002747	002749		
Sampling Date		2014/06/17 16:35	2014/06/17 17:40	2014/06/16 16:10		
COC Number		473021-04-01	473021-04-01	473021-04-01		
	Units	**BH7**	**BH8**	**BH11**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	4.5	0.50	3654015

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		002745	002745	002747	002747		002749		
Sampling Date		2014/06/17 16:35	2014/06/17 16:35	2014/06/17 17:40	2014/06/17 17:40		2014/06/16 16:10		
COC Number		473021-04-01	473021-04-01	473021-04-01	473021-04-01		473021-04-01		
	Units	**BH7**	**BH7 Lab-Dup**	**BH8**	**BH8 Lab-Dup**	**RDL**	**BH11**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	48		0.20	110	4.0	3650999
Toluene	ug/L	<0.20	<0.20	5.5		0.20	270	4.0	3650999
Ethylbenzene	ug/L	<0.20	<0.20	400		0.20	570	4.0	3650999
o-Xylene	ug/L	<0.20	<0.20	11		0.20	680	4.0	3650999
p+m-Xylene	ug/L	<0.40	<0.40	160		0.40	1500	8.0	3650999
Total Xylenes	ug/L	<0.40	<0.40	180		0.40	2200	8.0	3650999
F1 (C6-C10)	ug/L	<25	<25	1500		25	7600	500	3650999
F1 (C6-C10) - BTEX	ug/L	<25	<25	860		25	4500	500	3650999
F2 (C10-C16 Hydrocarbons)	ug/L	<100		520	490	100	2400	100	3652698
F3 (C16-C34 Hydrocarbons)	ug/L	<200		<200	<200	200	<200	200	3652698
F4 (C34-C50 Hydrocarbons)	ug/L	<200		<200	<200	200	<200	200	3652698
Reached Baseline at C50	ug/L	Yes		Yes	Yes		Yes		3652698
Extraction Surrogate Recovery (%)									
o-Terphenyl	%	102		101	100		101		3652698
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	101	102	105			102		3650999
4-Bromofluorobenzene	%	95	95	97			100		3650999
D10-Ethylbenzene	%	91	92	92			90		3650999
D4-1,2-Dichloroethane	%	97	96	95			99		3650999

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		002745		002747		002749		
Sampling Date		2014/06/17 16:35		2014/06/17 17:40		2014/06/16 16:10		
COC Number		473021-04-01		473021-04-01		473021-04-01		
	Units	**BH7**	**RDL**	**BH8**	**RDL**	**BH11**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<0.20	0.20	<10	10	<40	40	3646859
Ethylene Dibromide	ug/L	<0.20	0.20	<10	10	<40	40	3646859
Methyl t-butyl ether (MTBE)	ug/L	<0.20	0.20	<10	10	<40	40	3646859
Instrument Surrogate Recovery (%)								
4-Bromofluorobenzene	%	99		103		103		3646859
D4-1,2-Dichloroethane	%	102		96		96		3646859
D8-Toluene	%	98		102		101		3646859

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: 002745
Sample ID: BH7
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652698	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/24	Sarah Lam

Maxxam ID: 002745 Dup
Sample ID: BH7
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea

Maxxam ID: 002747
Sample ID: BH8
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/25	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652698	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam ID: 002747 Dup
Sample ID: BH8
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652698	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu

Maxxam ID: 002749
Sample ID: BH11
Matrix: Water

Collected: 2014/06/16
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652698	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Sample 002747-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

Sample 002749-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3646859	SLM	Method Blank	4-Bromofluorobenzene	2014/06/21		96	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		100	%	70 - 130
			1,2-Dichloroethane	2014/06/21	<0.20		ug/L	
			Ethylene Dibromide	2014/06/21	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/21	<0.20		ug/L	
3650999	AGA	Method Blank	1,4-Difluorobenzene	2014/06/24		99	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		101	%	70 - 130
			D10-Ethylbenzene	2014/06/24		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		98	%	70 - 130
			Benzene	2014/06/24	<0.20		ug/L	
			Toluene	2014/06/24	<0.20		ug/L	
			Ethylbenzene	2014/06/24	<0.20		ug/L	
			o-Xylene	2014/06/24	<0.20		ug/L	
			p+m-Xylene	2014/06/24	<0.40		ug/L	
			Total Xylenes	2014/06/24	<0.40		ug/L	
			F1 (C6-C10)	2014/06/24	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/24	<25		ug/L	
3652698	ZZ	Method Blank	o-Terphenyl	2014/06/24		102	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/24	<200		ug/L	
3654015	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/26	<0.50		ug/L	
3650999	AGA	RPD [002745-04]	Benzene	2014/06/24	NC		%	30
			Toluene	2014/06/24	NC		%	30
			Ethylbenzene	2014/06/24	NC		%	30
			o-Xylene	2014/06/24	NC		%	30
			p+m-Xylene	2014/06/24	NC		%	30
			Total Xylenes	2014/06/24	NC		%	30
			F1 (C6-C10)	2014/06/24	NC		%	30
			F1 (C6-C10) - BTEX	2014/06/24	NC		%	30
3652698	ZZ	RPD [002747-02]	F2 (C10-C16 Hydrocarbons)	2014/06/25	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/06/25	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/06/25	NC		%	30
3650999	AGA	Matrix Spike [002745-04]	1,4-Difluorobenzene	2014/06/24		104	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		99	%	70 - 130
			D10-Ethylbenzene	2014/06/24		90	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		97	%	70 - 130
			Benzene	2014/06/24		102	%	70 - 130
			Toluene	2014/06/24		96	%	70 - 130
			Ethylbenzene	2014/06/24		106	%	70 - 130
			o-Xylene	2014/06/24		107	%	70 - 130
			p+m-Xylene	2014/06/24		98	%	70 - 130
			F1 (C6-C10)	2014/06/24		70	%	70 - 130
3652698	ZZ	Matrix Spike [002745-02]	o-Terphenyl	2014/06/25		102	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/25		101	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/25		105	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/25		98	%	50 - 130
3646859	SLM	LCS	4-Bromofluorobenzene	2014/06/21		102	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		102	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			1,2-Dichloroethane	2014/06/21		92	%	70 - 130
			Ethylene Dibromide	2014/06/21		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/21		92	%	70 - 130
3650999	AGA	LCS	1,4-Difluorobenzene	2014/06/24		102	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		98	%	70 - 130
			D10-Ethylbenzene	2014/06/24		90	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		100	%	70 - 130
			Benzene	2014/06/24		105	%	70 - 130
			Toluene	2014/06/24		98	%	70 - 130
			Ethylbenzene	2014/06/24		108	%	70 - 130
			o-Xylene	2014/06/24		107	%	70 - 130
			p+m-Xylene	2014/06/24		99	%	70 - 130
			F1 (C6-C10)	2014/06/24		100	%	70 - 130
3652698	ZZ	LCS	o-Terphenyl	2014/06/25		108	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/25		107	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/25		113	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/25		104	%	60 - 130
3654015	PBA	LCS	Dissolved Lead (Pb)	2014/06/26		97	%	80 - 120

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4485
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 473021-04-01

473021

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: 1 Duncan Mill Rd. ~~90 Wynford Dr 6th Floor~~ Toronto ON ~~Don Mills ON M3C 1K5~~ M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca;	Email: Holly.Losignore@parsons.com;
Phone: (416) ~~441-7669~~ 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	Metals (Lead only)	BTEX	PHC F1-F4																	
1	~~BH102~~	X				~~12~~	~~2014/06/18~~	~~13:20~~	✓		✓	✓	✓	✓	LCK															
2	BH7	✓				12	2014/06/18	16:35	✓		✓	✓	✓	✓																
3	BH8	X				12	2014/06/18	17:40	✓		✓	✓	✓	✓																
4	BH11	X				12	2014/06/18	16:10	✓		✓	✓	✓	✓																
5							YYYY/MM/DD	HH:MM																						
6							YYYY/MM/DD	HH:MM																						
7							YYYY/MM/DD	HH:MM																						
8							YYYY/MM/DD	HH:MM																						
9							YYYY/MM/DD	HH:MM																						
10							YYYY/MM/DD	HH:MM																						

VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE

PHC F1-F4 with BTEX & PAH for carbons #>10-16

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS ☐ PWQO VC/C med to fine

☐ Other _____

SPECIAL INSTRUCTIONS:

Test samples as per TDG

ICE-YES

 # JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required:

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT	✓						PRESENT							PRESENT						
INTACT	✓						INTACT							INTACT						

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Libby Kuit	2014/06/18	17:00	1. Chantal Gagnon	CHANTAL GAGNON	2014/06/18	13:00
2.				2.			
3.				3.			

LAB USE ONLY
MAXXAM JOB # B4A4485
SAMPLES
LABELED BY: HGL
VERIFIED BY: ABM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*

Sampling Date: 2014/06/16 and 2014/06/17

Location: *1545 Woodroffe Avenue, Ottawa, Ontario*

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*

Laboratory Job Number: *B4A4485*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD	X			
Matrix Spike Recovery	X			
Lab Control Sample Recovery/Spiked Blank	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	*No field QC samples were submitted.*
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A*

Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*

Review Date: *2014/07/17*

Revision Date (if applicable):

Data Reviewed by (Signature):

Revised by (Signature):

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02
Your C.O.C. #: 465501-01-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3074849
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A6970
Received: 2014/06/20, 14:15

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	3	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02
Your C.O.C. #: 465501-01-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3074849
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A6970
Received: 2014/06/20, 14:15

Encryption Key Kudrat Bajwa
Kudrat Bajwa
30 Jun 2014 16:47:57 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		WJ7099	WJ7100	WJ7100	WJ7101		
Sampling Date		2014/06/18 14:45	2014/06/18 11:30	2014/06/18 11:30	2014/06/18 11:30		
COC Number		465501-01-01	465501-01-01	465501-01-01	465501-01-01		
	Units	**BH5**	**BH12**	**BH12 Lab-Dup**	**DUP-01**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	0.95	1.4	1.4	1.4	0.50	3653350

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		WJ7099		WJ7100	WJ7101		
Sampling Date		2014/06/18 14:45		2014/06/18 11:30	2014/06/18 11:30		
COC Number		465501-01-01		465501-01-01	465501-01-01		
	Units	**BH5**	**RDL**	**BH12**	**DUP-01**	**RDL**	**QC Batch**
Benzene	ug/L	120	2.0	2800	2900	4.0	3654450
Toluene	ug/L	8.8	2.0	3000	3100	4.0	3654450
Ethylbenzene	ug/L	1500	2.0	860	910	4.0	3654450
o-Xylene	ug/L	230	2.0	700	710	4.0	3654450
p+m-Xylene	ug/L	4700	4.0	1800	1900	8.0	3654450
Total Xylenes	ug/L	5000	4.0	2500	2600	8.0	3654450
F1 (C6-C10)	ug/L	16000	250	12000	13000	500	3654450
F1 (C6-C10) - BTEX	ug/L	9800	250	3100	4000	500	3654450
F2 (C10-C16 Hydrocarbons)	ug/L	3700	100	3200	2900	100	3656415
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	710	350	200	3656415
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	620	600	200	3656415
Reached Baseline at C50	ug/L	Yes		Yes	Yes		3656415
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	93		95	111		3656415
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	100		100	100		3654450
4-Bromofluorobenzene	%	103		108	106		3654450
D10-Ethylbenzene	%	90		94	95		3654450
D4-1,2-Dichloroethane	%	99		100	99		3654450

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		WJ7099	WJ7100	WJ7100	WJ7101		
Sampling Date		2014/06/18 14:45	2014/06/18 11:30	2014/06/18 11:30	2014/06/18 11:30		
COC Number		465501-01-01	465501-01-01	465501-01-01	465501-01-01		
	Units	**BH5**	**BH12**	**BH12 Lab-Dup**	**DUP-01**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<100	<100	<100	<100	100	3652220
Ethylene Dibromide	ug/L	<100	<100	<100	<100	100	3652220
Methyl t-butyl ether (MTBE)	ug/L	<100	<100	<100	<100	100	3652220
Instrument Surrogate Recovery (%)							
4-Bromofluorobenzene	%	104	100	100	101		3652220
D4-1,2-Dichloroethane	%	107	100	102	101		3652220
D8-Toluene	%	95	94	93	96		3652220

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success Through Science®

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: WJ7099
Sample ID: BH5
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3656415	2014/06/26	2014/06/27	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3652220	N/A	2014/06/25	Rebecca Schultz

Maxxam ID: WJ7100
Sample ID: BH12
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/26	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3656415	2014/06/26	2014/06/27	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3652220	N/A	2014/06/25	Rebecca Schultz

Maxxam ID: WJ7100 Dup
Sample ID: BH12
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3652220	N/A	2014/06/25	Rebecca Schultz

Maxxam ID: WJ7101
Sample ID: DUP-01
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/26	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3656415	2014/06/26	2014/06/27	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3652220	N/A	2014/06/25	Rebecca Schultz

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

For sample ID DUP-1, F2-F4 analysis conducted from Hydrochloric acid preserved container.

VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3652220	RSC	Method Blank	4-Bromofluorobenzene	2014/06/25		93	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		107	%	70 - 130
			D8-Toluene	2014/06/25		95	%	70 - 130
			1,2-Dichloroethane	2014/06/25	<0.20		ug/L	
			Ethylene Dibromide	2014/06/25	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/25	<0.20		ug/L	
3653350	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/29	<0.50		ug/L	
3654450	SHK	Method Blank	1,4-Difluorobenzene	2014/06/26		101	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		99	%	70 - 130
			D10-Ethylbenzene	2014/06/26		93	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		105	%	70 - 130
			Benzene	2014/06/26	<0.20		ug/L	
			Toluene	2014/06/26	<0.20		ug/L	
			Ethylbenzene	2014/06/26	<0.20		ug/L	
			o-Xylene	2014/06/26	<0.20		ug/L	
			p+m-Xylene	2014/06/26	<0.40		ug/L	
			Total Xylenes	2014/06/26	<0.40		ug/L	
			F1 (C6-C10)	2014/06/26	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/26	<25		ug/L	
3656415	ZZ	Method Blank	o-Terphenyl	2014/06/26		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/26	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/26	<200		ug/L	
3652220	RSC	RPD [WJ7100-04]	1,2-Dichloroethane	2014/06/25	NC		%	30
			Ethylene Dibromide	2014/06/25	NC		%	30
			Methyl t-butyl ether (MTBE)	2014/06/25	NC		%	30
3653350	PBA	RPD [WJ7100-03]	Dissolved Lead (Pb)	2014/06/29	NC		%	20
3652220	RSC	Matrix Spike [WJ7099-04]	4-Bromofluorobenzene	2014/06/25		102	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		98	%	70 - 130
			D8-Toluene	2014/06/25		103	%	70 - 130
			1,2-Dichloroethane	2014/06/25		89	%	70 - 130
			Ethylene Dibromide	2014/06/25		90	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/25		88	%	70 - 130
3653350	PBA	Matrix Spike [WJ7100-03]	Dissolved Lead (Pb)	2014/06/29		100	%	80 - 120
3652220	RSC	LCS	4-Bromofluorobenzene	2014/06/25		102	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		101	%	70 - 130
			D8-Toluene	2014/06/25		103	%	70 - 130
			1,2-Dichloroethane	2014/06/25		98	%	70 - 130
			Ethylene Dibromide	2014/06/25		98	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/25		94	%	70 - 130
3653350	PBA	LCS	Dissolved Lead (Pb)	2014/06/29		102	%	80 - 120
3654450	SHK	LCS	1,4-Difluorobenzene	2014/06/26		97	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		104	%	70 - 130
			D10-Ethylbenzene	2014/06/26		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		102	%	70 - 130
			Benzene	2014/06/26		108	%	70 - 130
			Toluene	2014/06/26		111	%	70 - 130
			Ethylbenzene	2014/06/26		114	%	70 - 130
			o-Xylene	2014/06/26		120	%	70 - 130
			p+m-Xylene	2014/06/26		111	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3656415	ZZ	LCS	F1 (C6-C10)	2014/06/26		80	%	70 - 130
			o-Terphenyl	2014/06/26		98	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26		102	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/26		106	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/26		108	%	60 - 130

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6970
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Abdi Mohamud, Senior Analyst

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

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

MaxXam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 465601-01-01

465601

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~90 Wynford Dr 5th Floor Don Mills ON M3C 1K5~~ 1 Duncan Mill Rd Toronto, ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca	Email: Holly.Losignore@parsons.com;
Phone: ~~(416) 442-5138 x~~ 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kurt	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 & BTEX	F2-F4	Lead	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE: VOC	
1	BH5	✓				12	2014/06/18	14:45	✓		✓	✓	✓	✓	
2	BH12	✓				12	2014/06/18	11:30	✓		✓	✓	✓	✓	
3	DUP-01	✓				12	2014/06/18	11:30	✓		✓	✓	✓	✓	
4															
5															
6															
7															
8															
9															
10															

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa, ON (at Medhurst)
IOL SITE # (if applicable): N/A
IOL PROJECT # (if applicable): MZ-00151
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
☑ REG 153 Table 3 ☐ 2004 ☑ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO I/C/C
☐ Other Fine to Medium grained

SPECIAL INSTRUCTIONS: Test sample as per TDG
ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT	✓			1°C	1°C	2°C
CUSTODY SEAL INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

LAB USE ONLY
MAXXAM JOB # B4A6970
SAMPLES
LABELED BY: HG1 VERIFIED BY: DKN

RELINQUISHED BY:		DATE:	TIME (24 HR):	RECEIVED BY:		DATE:	TIME (24 HR):
1.	Libby Kurt	2014/06/19	18:00	1.	FANG WANG	2014/06/20	14:15
2.				2.			
3.				3.			

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*

Sampling Date: 2014/06/18

Location: *1545 Woodroffe Avenue, Ottawa, Ontario*

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*

Laboratory Job Number: *B4A6970*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD	X			
Matrix Spike Recovery	X			
Lab Control Sample Recovery/Spiked Blank	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	*All field QC samples met the alert limits.*
Trip Blank Concentration			X	
Field Duplicate RPD	X			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A*

Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*

Review Date: *2014/07/17*

Revision Date (if applicable):

Data Reviewed by (Signature):

Revised by (Signature):

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-06-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3075210
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A6997
Received: 2014/06/20, 14:15

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	1	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	1	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-06-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3075210
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A6997
Received: 2014/06/20, 14:15

Encryption Key Kudrat Bajwa
Kudrat Bajwa
30 Jun 2014 16:43:38 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		WJ7971		
Sampling Date		2014/06/18 15:50		
COC Number		473021-06-01		
	Units	**BH-14**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<2.5	2.5	3653350

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		WJ7971		
Sampling Date		2014/06/18 15:50		
COC Number		473021-06-01		
	Units	**BH-14**	**RDL**	**QC Batch**
Benzene	ug/L	12	0.20	3654450
Toluene	ug/L	<0.20	0.20	3654450
Ethylbenzene	ug/L	19	0.20	3654450
o-Xylene	ug/L	<0.20	0.20	3654450
p+m-Xylene	ug/L	<0.40	0.40	3654450
Total Xylenes	ug/L	<0.40	0.40	3654450
F1 (C6-C10)	ug/L	31	25	3654450
F1 (C6-C10) - BTEX	ug/L	<25	25	3654450
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	3655406
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	3655406
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	3655406
Reached Baseline at C50	ug/L	Yes		3655406
Extraction Surrogate Recovery (%)				
o-Terphenyl	%	96		3655406
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	101		3654450
4-Bromofluorobenzene	%	107		3654450
D10-Ethylbenzene	%	98		3654450
D4-1,2-Dichloroethane	%	106		3654450

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		WJ7971		
Sampling Date		2014/06/18 15:50		
COC Number		473021-06-01		
	Units	**BH-14**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<0.40	0.40	3651573
Ethylene Dibromide	ug/L	<0.40	0.40	3651573
Methyl t-butyl ether (MTBE)	ug/L	1.9	0.40	3651573
Instrument Surrogate Recovery (%)				
4-Bromofluorobenzene	%	97		3651573
D4-1,2-Dichloroethane	%	99		3651573
D8-Toluene	%	99		3651573

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: WJ7971
Sample ID: BH-14
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Sample WJ7971-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3651573	BG1	Method Blank	4-Bromofluorobenzene	2014/06/25		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			1,2-Dichloroethane	2014/06/25	<0.20		ug/L	
			Ethylene Dibromide	2014/06/25	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/25	<0.20		ug/L	
3653350	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/29	<0.50		ug/L	
3654450	SHK	Method Blank	1,4-Difluorobenzene	2014/06/26		101	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		99	%	70 - 130
			D10-Ethylbenzene	2014/06/26		93	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		105	%	70 - 130
			Benzene	2014/06/26	<0.20		ug/L	
			Toluene	2014/06/26	<0.20		ug/L	
			Ethylbenzene	2014/06/26	<0.20		ug/L	
			o-Xylene	2014/06/26	<0.20		ug/L	
			p+m-Xylene	2014/06/26	<0.40		ug/L	
			Total Xylenes	2014/06/26	<0.40		ug/L	
			F1 (C6-C10)	2014/06/26	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/26	<25		ug/L	
3655406	DPO	Method Blank	o-Terphenyl	2014/06/26		97	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/26	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/26	<200		ug/L	
3655406	DPO	Matrix Spike [WJ7971-02]	o-Terphenyl	2014/06/26		97	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26		109	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/26		102	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/26		99	%	50 - 130
3651573	BG1	LCS	4-Bromofluorobenzene	2014/06/25		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		96	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			Ethylene Dibromide	2014/06/25		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/25		97	%	70 - 130
3653350	PBA	LCS	Dissolved Lead (Pb)	2014/06/29		102	%	80 - 120
3654450	SHK	LCS	1,4-Difluorobenzene	2014/06/26		97	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		104	%	70 - 130
			D10-Ethylbenzene	2014/06/26		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		102	%	70 - 130
			Benzene	2014/06/26		108	%	70 - 130
			Toluene	2014/06/26		111	%	70 - 130
			Ethylbenzene	2014/06/26		114	%	70 - 130
			o-Xylene	2014/06/26		120	%	70 - 130
			p+m-Xylene	2014/06/26		111	%	70 - 130
			F1 (C6-C10)	2014/06/26		80	%	70 - 130
3655406	DPO	LCS	o-Terphenyl	2014/06/26		100	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/26		93	%	60 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			F4 (C34-C50 Hydrocarbons)	2014/06/26		98	%	60 - 130

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

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A6997
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Abdi Mohamud, Senior Analyst

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

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 473021-06-01

473021

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~50 Wynford Dr 5th Floor Don Mills ON M3C 1K5~~ 1 Duncan Mill Road Toronto ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca;	Email: Holly.Losignore@parsons.com;
Phone: (416) ~~441-7866~~ 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE	BTEX	Petroleum Hydrocarbons F1 to F4	Metals (Lead only)																		
1	BH-14	✓				12	2014/06/18	15:50	✓		✓	✓	✓	✓																		
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																

IOL SITE LOCATION: Medway
1545 Woodroffe Ave., Ottawa, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
(Please indicate which Reg. version and if RSC required)
☑ REG 153 Table 3 ☐ 2004 ☑ 2011 ☐ RSC
☐ ODWS ☐ PWQO VC/C Fine to medium grained
☐ Other

SPECIAL INSTRUCTIONS:
Test samples as per TDG
ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID:																								
CUSTODY SEAL PRESENT INTACT	YES ✓ ✓	NO	TEMP	1°C 1	1°C 2	2°C 3	COOLER ID: CUSTODY SEAL PRESENT INTACT	YES	NO	TEMP	1	2	3	COOLER ID: CUSTODY SEAL PRESENT INTACT	YES	NO	TEMP	1	2	3	LAB USE ONLY MAXXAM JOB # B4A6997		
RELINQUISHED BY:			DATE:	TIME (24 HR)	RECEIVED BY:			DATE:	TIME (24 HR)	SAMPLES		
---	---	---	---	---	---	---	---	---	---	---	---	---
1.	Libby Kuit	2014/06/19	18:00	1.	MAGDALENA COP	2014/06/20	14:15	LABELED BY: HG1	VERIFIED BY: DKN
2.				2.					
3.				3.					

COC - 1012 (2013) IOL - ON

White: Maxxam

Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*

Sampling Date: 2014/06/18

Location: *1545 Woodroffe Avenue, Ottawa, Ontario*

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*

Laboratory Job Number: *B4A6997*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery	X			
Lab Control Sample Recovery/Spiked Blank	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	*No field QC samples were submitted.*
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A*

Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*

Data Reviewed by (Signature):

Review Date: *2014/07/17*

Revision Date (if applicable):

Revised by (Signature):

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 465501-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3074125
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A7008
Received: 2014/06/20, 14:15

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	2	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 465501-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3074125
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A7008
Received: 2014/06/20, 14:15

Encryption Key Kudrat Bajwa
Kudrat Bajwa
30 Jun 2014 11:15:59 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		WJ8186	WJ8187		
Sampling Date		2014/06/18 16:30	2014/06/18 16:45		
COC Number		465501-02-01	465501-02-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	3653421

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		WJ8186	WJ8187		
Sampling Date		2014/06/18 16:30	2014/06/18 16:45		
COC Number		465501-02-01	465501-02-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	3654450
Toluene	ug/L	<0.20	<0.20	0.20	3654450
Ethylbenzene	ug/L	<0.20	<0.20	0.20	3654450
o-Xylene	ug/L	<0.20	<0.20	0.20	3654450
p+m-Xylene	ug/L	<0.40	<0.40	0.40	3654450
Total Xylenes	ug/L	<0.40	<0.40	0.40	3654450
F1 (C6-C10)	ug/L	<25	<25	25	3654450
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	3654450
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	3655406
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	3655406
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	3655406
Reached Baseline at C50	ug/L	Yes	Yes		3655406
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	94	95		3655406
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105	105		3654450
4-Bromofluorobenzene	%	99	96		3654450
D10-Ethylbenzene	%	97	97		3654450
D4-1,2-Dichloroethane	%	108	109		3654450

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		WJ8186	WJ8187		
Sampling Date		2014/06/18 16:30	2014/06/18 16:45		
COC Number		465501-02-01	465501-02-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	<0.50	0.50	3651573
1,1-Dichloroethane	ug/L	<0.10	<0.10	0.10	3651573
1,2-Dichloroethane	ug/L	<0.20	<0.20	0.20	3651573
1,1-Dichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
cis-1,2-Dichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
trans-1,2-Dichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
Ethylene Dibromide	ug/L	<0.20	<0.20	0.20	3651573
Methyl t-butyl ether (MTBE)	ug/L	<0.20	<0.20	0.20	3651573
Tetrachloroethylene	ug/L	<0.10	<0.10	0.10	3651573
1,1,1-Trichloroethane	ug/L	<0.10	<0.10	0.10	3651573
1,1,2-Trichloroethane	ug/L	<0.20	<0.20	0.20	3651573
Trichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	3651573
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	<0.20	0.20	3651573
Instrument Surrogate Recovery (%)					
4-Bromofluorobenzene	%	96	96		3651573
D4-1,2-Dichloroethane	%	103	101		3651573
D8-Toluene	%	97	98		3651573

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: WJ8186
Sample ID: FIELD BLANK-01
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653421	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam ID: WJ8187
Sample ID: TRIP BLANK-01
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653421	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3651573	BG1	Method Blank	4-Bromofluorobenzene	2014/06/25		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/06/25	<0.50		ug/L	
			1,1-Dichloroethane	2014/06/25	<0.10		ug/L	
			1,2-Dichloroethane	2014/06/25	<0.20		ug/L	
			1,1-Dichloroethylene	2014/06/25	<0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/06/25	<0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/06/25	<0.10		ug/L	
			Ethylene Dibromide	2014/06/25	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/25	<0.20		ug/L	
			Tetrachloroethylene	2014/06/25	<0.10		ug/L	
			1,1,1-Trichloroethane	2014/06/25	<0.10		ug/L	
			1,1,2-Trichloroethane	2014/06/25	<0.20		ug/L	
			Trichloroethylene	2014/06/25	<0.10		ug/L	
			Vinyl Chloride	2014/06/25	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/06/25	<0.20		ug/L	
3653421	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/26	<0.50		ug/L	
3654450	SHK	Method Blank	1,4-Difluorobenzene	2014/06/26		101	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		99	%	70 - 130
			D10-Ethylbenzene	2014/06/26		93	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		105	%	70 - 130
			Benzene	2014/06/26	<0.20		ug/L	
			Toluene	2014/06/26	<0.20		ug/L	
			Ethylbenzene	2014/06/26	<0.20		ug/L	
			o-Xylene	2014/06/26	<0.20		ug/L	
			p+m-Xylene	2014/06/26	<0.40		ug/L	
			Total Xylenes	2014/06/26	<0.40		ug/L	
			F1 (C6-C10)	2014/06/26	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/26	<25		ug/L	
3655406	DPO	Method Blank	o-Terphenyl	2014/06/26		97	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/26	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/26	<200		ug/L	
3651573	BG1	LCS	4-Bromofluorobenzene	2014/06/25		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		96	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/06/25		97	%	60 - 140
			1,1-Dichloroethane	2014/06/25		96	%	70 - 130
			1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			1,1-Dichloroethylene	2014/06/25		109	%	70 - 130
			cis-1,2-Dichloroethylene	2014/06/25		95	%	70 - 130
			trans-1,2-Dichloroethylene	2014/06/25		99	%	70 - 130
			Ethylene Dibromide	2014/06/25		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/25		97	%	70 - 130
			Tetrachloroethylene	2014/06/25		98	%	70 - 130
			1,1,1-Trichloroethane	2014/06/25		96	%	70 - 130
			1,1,2-Trichloroethane	2014/06/25		96	%	70 - 130
			Trichloroethylene	2014/06/25		94	%	70 - 130
			Vinyl Chloride	2014/06/25		88	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Trichlorofluoromethane (FREON 11)	2014/06/25		95	%	70 - 130
3653421	PBA	LCS	Dissolved Lead (Pb)	2014/06/26		97	%	80 - 120
3654450	SHK	LCS	1,4-Difluorobenzene	2014/06/26		97	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		104	%	70 - 130
			D10-Ethylbenzene	2014/06/26		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		102	%	70 - 130
			Benzene	2014/06/26		108	%	70 - 130
			Toluene	2014/06/26		111	%	70 - 130
			Ethylbenzene	2014/06/26		114	%	70 - 130
			o-Xylene	2014/06/26		120	%	70 - 130
			p+m-Xylene	2014/06/26		111	%	70 - 130
			F1 (C6-C10)	2014/06/26		80	%	70 - 130
3655406	DPO	LCS	o-Terphenyl	2014/06/26		100	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/26		93	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/26		98	%	60 - 130

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Abdi Mohamud, Senior Analyst

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

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM -OF-CUSTODY RECORD

NALYSIS REQUESTED

Page 1 of 1

C of C # 465501-02-01

465501

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~90 Wynford Dr 5th Floor~~ ~~Don Mills ON M3C 1K5~~ 1 Duncan Mill Rd Toronto, ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca	Email: Holly.Losignore@parsons.com;
Phone: (416) ~~(416) 442-5138~~ 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

VOC (14): ethylene dibromide, 1,2-dichloroethane, 1,1-dichloroethane, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, vinyl chloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, MTBE, Freon-11, Freon-12

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 & BTEX	F2-F4	Lead	VOC
1	Field Blank-01	✓				12	2014/06/18	16:30	✓		✓	✓	✓	✓
2	Trip Blank-01	✓				8	2014/06/18	16:45			✓	✓	✓	✓
3														
4														
5														
6														
7														
8														
9														
10														

IOL SITE LOCATION: at Medhurst
1545 Woodroffe Ave., Ottawa, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
☑ REG 153 Table 3 ☐ 2004 ☑ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO I/C/C
☐ Other Fine to Medium grained

SPECIAL INSTRUCTIONS: Test samples as per TDG

ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1						
CUSTODY SEAL	YES	NO	TEMP	1°C	1°C	2°C
PRESENT	✓			1	2	3
INTACT	✓					

COOLER ID:						
CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT						
INTACT						

COOLER ID:						
CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT						
INTACT						

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR):
1. [signature]	Libby Kuit	2014/06/19	18:00	1. Gp	MAGDALENA COP	2014/06/20	14:15
2.				2.			
3.				3.			

LAB USE ONLY
MAXXAM JOB # B4A7008

SAMPLES
LABELED BY: ~~DK~~ HG1 H-G
VERIFIED BY: DKW
2014/06/20

COC—1012 (2013) KIL—ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*

Sampling Date: 2014/06/18

Location: *1545 Woodroffe Avenue, Ottawa, Ontario*

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*

Laboratory Job Number: *B4A7008*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Lab Control Sample Recovery/Spiked Blank	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	X			*All field QC samples met the alert limits.*
Trip Blank Concentration	X			
Field Duplicate RPD			X	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

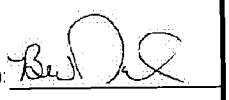
Date Issued: *N/A*

Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*

Data Reviewed by (Signature): 

Review Date: *2014/07/17*

Revision Date (if applicable):

Revised by (Signature):

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02
Your C.O.C. #: 473021-05-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/07/02
Report #: R3076013
Version: 2

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A7262
Received: 2014/06/20, 14:15

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	3	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02
Your C.O.C. #: 473021-05-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/07/02
Report #: R3076013
Version: 2

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A7262
Received: 2014/06/20, 14:15

Encryption Key Kudrat Bajwa
Kudrat Bajwa
02 Jul 2014 16:00:17 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		WJ9442	WJ9443	WJ9444		
Sampling Date		2014/06/18 10:00	2014/06/18 14:00	2014/06/18 08:30		
COC Number		473021-05-01	473021-05-01	473021-05-01		
	Units	**BH-13**	**BH-15**	**BH-16**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.50	3653350

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		WJ9442	WJ9442			WJ9443	WJ9443	WJ9444		
Sampling Date		2014/06/18 10:00	2014/06/18 10:00			2014/06/18 14:00	2014/06/18 14:00	2014/06/18 08:30		
COC Number		473021-05-01	473021-05-01			473021-05-01	473021-05-01	473021-05-01		
	Units	**BH-13**	**BH-13 Lab-Dup**	**RDL**	**QC Batch**	**BH-15**	**BH-15 Lab-Dup**	**BH-16**	**RDL**	**QC Batch**
Benzene	ug/L	36	35	1.0	3654450	<0.20	<0.20	<0.20	0.20	3654989
Toluene	ug/L	55	51	1.0	3654450	<0.20	<0.20	<0.20	0.20	3654989
Ethylbenzene	ug/L	1000	1000	1.0	3654450	<0.20	<0.20	<0.20	0.20	3654989
o-Xylene	ug/L	140	140	1.0	3654450	<0.20	<0.20	<0.20	0.20	3654989
p+m-Xylene	ug/L	990	960	2.0	3654450	<0.40	<0.40	<0.40	0.40	3654989
Total Xylenes	ug/L	1100	1100	2.0	3654450	<0.40	<0.40	<0.40	0.40	3654989
F1 (C6-C10)	ug/L	4400	4000	130	3654450	<25	<25	390	25	3654989
F1 (C6-C10) - BTEX	ug/L	2100	1800	130	3654450	<25	<25	390	25	3654989
F2 (C10-C16 Hydrocarbons)	ug/L	1000		100	3655406	<100		<100	100	3655406
F3 (C16-C34 Hydrocarbons)	ug/L	<200		200	3655406	<200		<200	200	3655406
F4 (C34-C50 Hydrocarbons)	ug/L	<200		200	3655406	<200		<200	200	3655406
Reached Baseline at C50	ug/L	Yes			3655406	Yes		Yes		3655406
Extraction Surrogate Recovery (%)										
o-Terphenyl	%	94			3655406	95		93		3655406
Instrument Surrogate Recovery (%)										
1,4-Difluorobenzene	%	100	101		3654450	102	104	103		3654989
4-Bromofluorobenzene	%	105	105		3654450	96	95	95		3654989
D10-Ethylbenzene	%	90	91		3654450	87	89	88		3654989
D4-1,2-Dichloroethane	%	99	99		3654450	95	97	96		3654989

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		WJ9442		WJ9443	WJ9444		
Sampling Date		2014/06/18 10:00		2014/06/18 14:00	2014/06/18 08:30		
COC Number		473021-05-01		473021-05-01	473021-05-01		
	Units	**BH-13**	**RDL**	**BH-15**	**BH-16**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug/L		0.50	<0.50		0.50	3651573
1,1-Dichloroethane	ug/L		0.10	<0.10		0.10	3651573
1,2-Dichloroethane	ug/L	<40	40	<0.20	<0.20	0.20	3651573
1,1-Dichloroethylene	ug/L			<0.10		0.10	3651573
cis-1,2-Dichloroethylene	ug/L			<0.10		0.10	3651573
trans-1,2-Dichloroethylene	ug/L			<0.10		0.10	3651573
Ethylene Dibromide	ug/L	<40	40	<0.20	<0.20	0.20	3651573
Methyl t-butyl ether (MTBE)	ug/L	<40	40	<0.20	<0.20	0.20	3651573
Tetrachloroethylene	ug/L			<0.10		0.10	3651573
1,1,1-Trichloroethane	ug/L			<0.10		0.10	3651573
1,1,2-Trichloroethane	ug/L			<0.20		0.20	3651573
Trichloroethylene	ug/L			<0.10		0.10	3651573
Vinyl Chloride	ug/L			<0.20		0.20	3651573
Trichlorofluoromethane (FREON 11)	ug/L			<0.20		0.20	3651573
Instrument Surrogate Recovery (%)							
4-Bromofluorobenzene	%	100		98	98		3651573
D4-1,2-Dichloroethane	%	98		102	101		3651573
D8-Toluene	%	99		98	102		3651573

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: WJ9442
Sample ID: BH-13
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam ID: WJ9442 Dup
Sample ID: BH-13
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim

Maxxam ID: WJ9443
Sample ID: BH-15
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654989	N/A	2014/06/26	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam ID: WJ9443 Dup
Sample ID: BH-15
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654989	N/A	2014/06/26	Anca Ganea

Maxxam ID: WJ9444
Sample ID: BH-16
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654989	N/A	2014/06/27	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653350	N/A	2014/06/29	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.0°C

Sample WJ9442-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3651573	BG1	Method Blank	4-Bromofluorobenzene	2014/06/25		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/06/25	<0.50		ug/L	
			1,1-Dichloroethane	2014/06/25	<0.10		ug/L	
			1,2-Dichloroethane	2014/06/25	<0.20		ug/L	
			1,1-Dichloroethylene	2014/06/25	<0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/06/25	<0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/06/25	<0.10		ug/L	
			Ethylene Dibromide	2014/06/25	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/25	<0.20		ug/L	
			Tetrachloroethylene	2014/06/25	<0.10		ug/L	
			1,1,1-Trichloroethane	2014/06/25	<0.10		ug/L	
			1,1,2-Trichloroethane	2014/06/25	<0.20		ug/L	
			Trichloroethylene	2014/06/25	<0.10		ug/L	
			Vinyl Chloride	2014/06/25	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/06/25	<0.20		ug/L	
3653350	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/29	<0.50		ug/L	
3654450	SHK	Method Blank	1,4-Difluorobenzene	2014/06/26		101	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		99	%	70 - 130
			D10-Ethylbenzene	2014/06/26		93	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		105	%	70 - 130
			Benzene	2014/06/26	<0.20		ug/L	
			Toluene	2014/06/26	<0.20		ug/L	
			Ethylbenzene	2014/06/26	<0.20		ug/L	
			o-Xylene	2014/06/26	<0.20		ug/L	
			p+m-Xylene	2014/06/26	<0.40		ug/L	
			Total Xylenes	2014/06/26	<0.40		ug/L	
			F1 (C6-C10)	2014/06/26	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/26	<25		ug/L	
3654989	AGA	Method Blank	1,4-Difluorobenzene	2014/06/26		96	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		97	%	70 - 130
			D10-Ethylbenzene	2014/06/26		103	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		98	%	70 - 130
			Benzene	2014/06/26	<0.20		ug/L	
			Toluene	2014/06/26	<0.20		ug/L	
			Ethylbenzene	2014/06/26	<0.20		ug/L	
			o-Xylene	2014/06/26	<0.20		ug/L	
			p+m-Xylene	2014/06/26	<0.40		ug/L	
			Total Xylenes	2014/06/26	<0.40		ug/L	
			F1 (C6-C10)	2014/06/26	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/26	<25		ug/L	
3655406	DPO	Method Blank	o-Terphenyl	2014/06/26		97	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/26	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/26	<200		ug/L	
3654450	SHK	RPD [WJ9442-04]	Benzene	2014/06/27	2.4		%	30
			Toluene	2014/06/27	6.0		%	30
			Ethylbenzene	2014/06/27	3.2		%	30
			o-Xylene	2014/06/27	1.6		%	30

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			p+m-Xylene	2014/06/27	3.2		%	30
			Total Xylenes	2014/06/27	3.0		%	30
			F1 (C6-C10)	2014/06/27	9.3		%	30
			F1 (C6-C10) - BTEX	2014/06/27	16.3		%	30
3654989	AGA	RPD [WJ9443-04]	Benzene	2014/06/26	NC		%	30
			Toluene	2014/06/26	NC		%	30
			Ethylbenzene	2014/06/26	NC		%	30
			o-Xylene	2014/06/26	NC		%	30
			p+m-Xylene	2014/06/26	NC		%	30
			Total Xylenes	2014/06/26	NC		%	30
			F1 (C6-C10)	2014/06/26	NC		%	30
			F1 (C6-C10) - BTEX	2014/06/26	NC		%	30
3654450	SHK	Matrix Spike [WJ9442-04]	1,4-Difluorobenzene	2014/06/27		99	%	70 - 130
			4-Bromofluorobenzene	2014/06/27		102	%	70 - 130
			D10-Ethylbenzene	2014/06/27		90	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/27		97	%	70 - 130
			Benzene	2014/06/27		NC	%	70 - 130
			Toluene	2014/06/27		NC	%	70 - 130
			Ethylbenzene	2014/06/27		NC	%	70 - 130
			o-Xylene	2014/06/27		NC	%	70 - 130
			p+m-Xylene	2014/06/27		NC	%	70 - 130
			F1 (C6-C10)	2014/06/27		NC	%	70 - 130
3654989	AGA	Matrix Spike [WJ9443-04]	1,4-Difluorobenzene	2014/06/26		104	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		100	%	70 - 130
			D10-Ethylbenzene	2014/06/26		85	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		96	%	70 - 130
			Benzene	2014/06/26		104	%	70 - 130
			Toluene	2014/06/26		97	%	70 - 130
			Ethylbenzene	2014/06/26		106	%	70 - 130
			o-Xylene	2014/06/26		106	%	70 - 130
			p+m-Xylene	2014/06/26		99	%	70 - 130
			F1 (C6-C10)	2014/06/26		83	%	70 - 130
3651573	BG1	LCS	4-Bromofluorobenzene	2014/06/25		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		96	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/06/25		97	%	60 - 140
			1,1-Dichloroethane	2014/06/25		96	%	70 - 130
			1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			1,1-Dichloroethylene	2014/06/25		109	%	70 - 130
			cis-1,2-Dichloroethylene	2014/06/25		95	%	70 - 130
			trans-1,2-Dichloroethylene	2014/06/25		99	%	70 - 130
			Ethylene Dibromide	2014/06/25		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/25		97	%	70 - 130
			Tetrachloroethylene	2014/06/25		98	%	70 - 130
			1,1,1-Trichloroethane	2014/06/25		96	%	70 - 130
			1,1,2-Trichloroethane	2014/06/25		96	%	70 - 130
			Trichloroethylene	2014/06/25		94	%	70 - 130
			Vinyl Chloride	2014/06/25		88	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/06/25		95	%	70 - 130
3653350	PBA	LCS	Dissolved Lead (Pb)	2014/06/29		102	%	80 - 120

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3654450	SHK	LCS	1,4-Difluorobenzene	2014/06/26		97	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		104	%	70 - 130
			D10-Ethylbenzene	2014/06/26		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		102	%	70 - 130
			Benzene	2014/06/26		108	%	70 - 130
			Toluene	2014/06/26		111	%	70 - 130
			Ethylbenzene	2014/06/26		114	%	70 - 130
			o-Xylene	2014/06/26		120	%	70 - 130
			p+m-Xylene	2014/06/26		111	%	70 - 130
			F1 (C6-C10)	2014/06/26		80	%	70 - 130
3654989	AGA	LCS	1,4-Difluorobenzene	2014/06/26		100	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		98	%	70 - 130
			D10-Ethylbenzene	2014/06/26		81	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		97	%	70 - 130
			Benzene	2014/06/26		100	%	70 - 130
			Toluene	2014/06/26		96	%	70 - 130
			Ethylbenzene	2014/06/26		106	%	70 - 130
			o-Xylene	2014/06/26		104	%	70 - 130
			p+m-Xylene	2014/06/26		97	%	70 - 130
			F1 (C6-C10)	2014/06/26		106	%	70 - 130
3655406	DPO	LCS	o-Terphenyl	2014/06/26		100	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/26		93	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/26		98	%	60 - 130

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.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7262
Report Date: 2014/07/02

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON AT MEDHURST
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Abdi Mohamud, Senior Analyst

Cristina Carriere, Scientific Services

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

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXC

ERIAL OIL - MAXXAM
STODY RECORD
REQUESTED

Page 1 of 1

C of C # 473021-05-01

473021

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrolo	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~90 Wynford Dr 5th Floor Don Mills ON M3C 1K5~~ SWI 1 Duncan Mill Road Toronto, ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca;	Email: Holly.Losignore@parsons.com;
Phone: (416) ~~441-7866~~ EDR 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE	BTEX	~~PHC F1~~ Petroleum Hydrocarbons F1 to F4	Metals (Lead Only)	VOCs ← VOC (14): ethylene dibromide, 1,2-dichloroethane, 1,1-dichloroethane, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, methyl chloride, MTBE, 1,1,1-trichloroethane, 1,1,2-trichloroethane, Freon-11, Freon-12
1	BH-13	✓				12	2019/06/18	10:00	✓		✓	✓	✓	✓	✓
2	BH-15	✓				12	2019/06/18	14:00	✓		✓	✓	✓	✓	
3	BH-16	✓				12	2019/06/18	08:30	✓		✓	✓	✓	✓	
4															
5															
6															
7															
8															
9															
10															

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa, ON (at Medhurst)
IOL SITE # (if applicable): N/A
IOL PROJECT # (if applicable): MZ.00151
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
☑ REG 153 Table 3 ☐ 2004 ☑ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO I/C/C
☐ Other Fine to medium grained

SPECIAL INSTRUCTIONS:
Test samples as per TDG
ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
INTACT	✓		-1°C			

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
INTACT						

LAB USE ONLY
MAXXAM JOB # B4A7262

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Libby Kuit	2019/06/19	18:00	1. Chantal Gagnon	CHANTAL GAGNON	2019/06/20	14:15
2.				2.			
3.				3.			

SAMPLES
LABELED BY: HG1
VERIFIED BY: FW

COC - 1012 (2013) IOL - ON

White: Maxxam

Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*

Sampling Date: 2014/06/18

Location: *1545 Woodroffe Avenue, Ottawa, Ontario*

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*

Laboratory Job Number: *B4A7262*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A*

Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*

Data Reviewed by (Signature):

Review Date: *2014/07/17*

Revision Date (if applicable):

Revised by (Signature):

APPENDIX C

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

There were no lab or field QA/QC issues identified in this report that need to be discussed in detail.

The groundwater field QA/QC program consisted of one field duplicate, one field blank, and one trip blank samples for the analysis of BTEX, PHC fractions F1 to F4, lead, and VOCs.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit.

The designated field duplicate RPD alert limits are presented in Tables C-1 and C-2 for groundwater. As indicated, all of the RPDs were within acceptable limits.

The water trip blank and field blank data were compared to the alert limits and are presented in Tables C-3 and C-4. As indicated, all of the RPDs were within acceptable limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for groundwater samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. No laboratory QA/QC issues were identified.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE C-1

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH12	RDL	DUP-01 FIELD DUPLICATE BH12	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B4A6970		B4A6970			
Maxxam Sample ID	WJ7100		WJ7101			
Date Sampled (yyyy/mm/dd)	2014/06/18		2014/06/18			
PARAMETERS						
Benzene	2800	4.0	2900	4.0	4%	80
Toluene	3000	4.0	3100	4.0	3%	80
Ethylbenzene	860	4.0	910	4.0	6%	80
Total Xylenes	2500	8.0	2600	8.0	4%	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	3100	500	4000	500	25%	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	3200	100	2900	100	10%	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	710	200	350	200	NC	80
Petroleum Hydrocarbons F4 (>C34 - C50)	620	200	600	200	NC	80
Lead	1.4	0.50	1.4	0.50	NC	50

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-2

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	BH12	RDL	DUP-01 FIELD DUPLICATE BH12	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B4A6970		B4A6970			
Maxxam Sample ID	WJ7100		WJ7101			
Date Sampled (yyyy/mm/dd)	2014/06/18		2014/06/18			
PARAMETERS						
Ethylene Dibromide	<100	100	<100	100	NC	80
1,2-Dichloroethane	<100	100	<100	100	NC	80
Methyl t-butyl ether	<100	100	<100	100	NC	80

a - Alert limits used for field duplicate samples
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-3

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	RDL	FIELD BLANK-01	EXCEEDS ALERT LIMIT (yes/no)	TRIP BLANK-01	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B4A7008		B4A7008	
Maxxam Sample ID		WJ8186		WJ8187	
Date Sampled (yyyy/mm/dd)		2014/06/18		2014/06/18	
PARAMETERS					
Benzene	0.20	<0.20	No	<0.20	No
Toluene	0.20	<0.20	No	<0.20	No
Ethylbenzene	0.20	<0.20	No	<0.20	No
Total Xylenes	0.40	<0.40	No	<0.40	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	25	<25	No	<25	No
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	No	<100	No
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	200	<200	No	<200	No
Petroleum Hydrocarbons F4 (>C34 - C50)	200	<200	No	<200	No
Lead	0.50	<0.50	No	<0.50	No

a - BTEX have been subtracted from the fraction
b - Naphthalene has not been subtracted from the fraction
c - PAHs have not been subtracted from the fraction
RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX and lead; 2x RDL for petroleum hydrocarbons fractions F1 to F4.
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-4

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS Maxxam Certificate of Analysis No. Maxxam Sample ID Date Sampled (yyyy/mm/dd)	RDL	FIELD BLANK-01 B4A7008 WJ8186 2014/06/18	EXCEEDS ALERT LIMIT (yes/no)	TRIP BLANK-01 B4A7008 WJ8187 2014/06/18	EXCEEDS ALERT LIMIT (yes/no)
PARAMETERS					
Ethylene Dibromide	0.20	<0.20	No	<0.20	No
Dichlorodifluoromethane	0.50	<0.50	No	<0.50	No
1,1-Dichloroethane	0.10	<0.10	No	<0.10	No
1,2-Dichloroethane	0.20	<0.20	No	<0.20	No
1,1-Dichloroethylene	0.10	<0.10	No	<0.10	No
cis-1,2-Dichloroethylene	0.10	<0.10	No	<0.10	No
trans-1,2-Dichloroethylene	0.10	<0.10	No	<0.10	No
Methyl t-butyl ether	0.20	<0.20	No	<0.20	No
Tetrachloroethylene	0.10	<0.10	No	<0.10	No
1,1,1-Trichloroethane	0.10	<0.10	No	<0.10	No
1,1,2-Trichloroethane	0.20	<0.20	No	<0.20	No
Trichloroethylene	0.10	<0.10	No	<0.10	No
Trichlorofluoromethane	0.20	<0.20	No	<0.20	No
Vinyl Chloride	0.20	<0.20	No	<0.20	No

RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for VOCs.
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

PARSONS
3715 Laird Road, Suite 100 • Mississauga, ON L5L 0A3 • (905) 820-1210 • Fax (905) 820-1221 • www.parsons.com

September 4, 2014

Ref. No.: 10-8518T02

Imperial Oil Environmental Services
1 Duncan Mill Road
North York, Ontario
M3B 1Z2

These documents and the information contained therein are confidential, property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch. II "1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch. I "1", as such legislation may be amended from time to time.

Title: 2014 Groundwater Monitoring and Sampling Data Package
Site Address: Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario
Facility Type: Boulevard
Limitation of Liability, Scope of Report and Third Party Reliance: Appendix A

Sampling Events: June 2014

Scope of Work

- Monitor all accessible monitoring wells for subsurface vapour concentrations, water levels, and the presence or absence of light non-aqueous phase liquids (free product) during the sampling event.
- Collect groundwater samples from selected accessible wells (specifically: BH101 to BH104, BH-201 and BH-202) for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX); petroleum hydrocarbon (PHC) fractions F1 to F4; lead; and selected volatile organic compounds (VOCs).
- Compare the groundwater analytical results to the applicable MOE April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. Specifically, the Table 3 generic site condition standards for non-potable groundwater conditions, coarse textured soils, and all types of property use were selected. The previous groundwater analytical results, collected prior to July 1, 2011, were compared to the MOE March 9, 2004 Table 3 (non-potable) site condition standards with the same conditions noted above.

Results

- Groundwater Monitoring (Date; Stratigraphic Unit; Depth to Groundwater Range; Groundwater Direction)
  ➢ June 16, 2014; shallow overburden; 4.36 mbgs to 5.08 mbgs; northwest (Drawing No. 1 and Table 1)

- Monitoring Well Headspace Vapour (Date; Range)
  ➢ June 16, 2014; 10 ppmv to 52% LEL (Table 1);

- Free Product Occurrence (Date; Observations)
  ➢ June 16, 2014; no measurable free product encountered

- Groundwater Analytical Exceedances (Date; Wells)
  ➢ June 17, 2014; BH101 (Tables 2 and 3 and Drawing No. 2)

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

Methodology

Subsurface Vapour Concentrations

Immediately after removing the well caps, the maximum subsurface vapour concentrations in the wells were measured using a RKI Eagle combustible gas detector that was operated in methane elimination mode. The collection tube of the combustible gas detector was inserted into the riser pipes and the peak instrument reading recorded. Vapour concentrations were not measured in BH-201 and BH-202 because the wells were paved over.

Combustible Gas Detector Calibrations

The RKI Eagle calibration was checked daily in the field, by checking the instrument response against a nominal 43 %LEL concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument reading was within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if the reading was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field until the instrument read within ±10% of the gas standard.

Depth to Groundwater and Free Product Thickness

The depth to the water table and presence or absence of free product in the wells were determined with a Heron H.OIL interface probe that was cleaned with soapy water, then rinsed with distilled water, between monitoring wells. Water levels were not measured in BH-201 and BH-202 because the wells were paved over.

Low-Flow Sampling Methodology

All samples were collected using low-flow sampling (specifically, BH101 to BH104). A variable-flow peristaltic pump was used to remove groundwater from the mid-point of the monitoring well screened zone. The pump was connected to a flow-through cell equipped with a YSI multimeter (Horiba U-22) probe that measured pH, temperature, electrical conductivity, dissolved oxygen (DO), reduction oxidation potential (REDOX), and turbidity. During low-flow purging, the water level in each well was continually monitored and the purging rate was adjusted such that the overall drawdown from the static groundwater level did not exceed approximately 10 cm. The purging rates ranged from approximately 120 mL/min to 145 mL/min. The groundwater sample was collected when the pH (± 0.1 pH Units), temperature (± 3%), electrical conductivity (± 3%), DO (± 10%), REDOX (± 10 mV), and turbidity (± 10%) measurements stabilized, over three consecutive readings, taken at a minimum rate of at least one per every flow-through cell volume.

The pump and flow-through cell were connected to the wells with polyethylene and silicone tubing that were individually dedicated to each monitoring well. The groundwater samples were collected using the dedicated tubing. Water samples were not collected in BH-201 and BH-202 because the wells were paved over.

Laboratory Analysis of Samples

Samples were collected in the appropriate sample containers, using the appropriate preservatives. All sample bottles were supplied by the laboratory. The groundwater samples were placed in coolers with ice immediately after they were collected. The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam's Mississauga facility is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA). Analytical methods used are referenced in the certificates of analysis presented in Appendix B.

Quality Assurance and Quality Control Results

The laboratory and field QA/QC discussions are presented in Appendix C. In summary, no QA/QC issues were identified that would materially affect the overall conclusions of the groundwater monitoring and sampling assessment presented in this report.

Closure

We trust the foregoing information is satisfactory for your requirements.

PARSONS CANADA LTD.

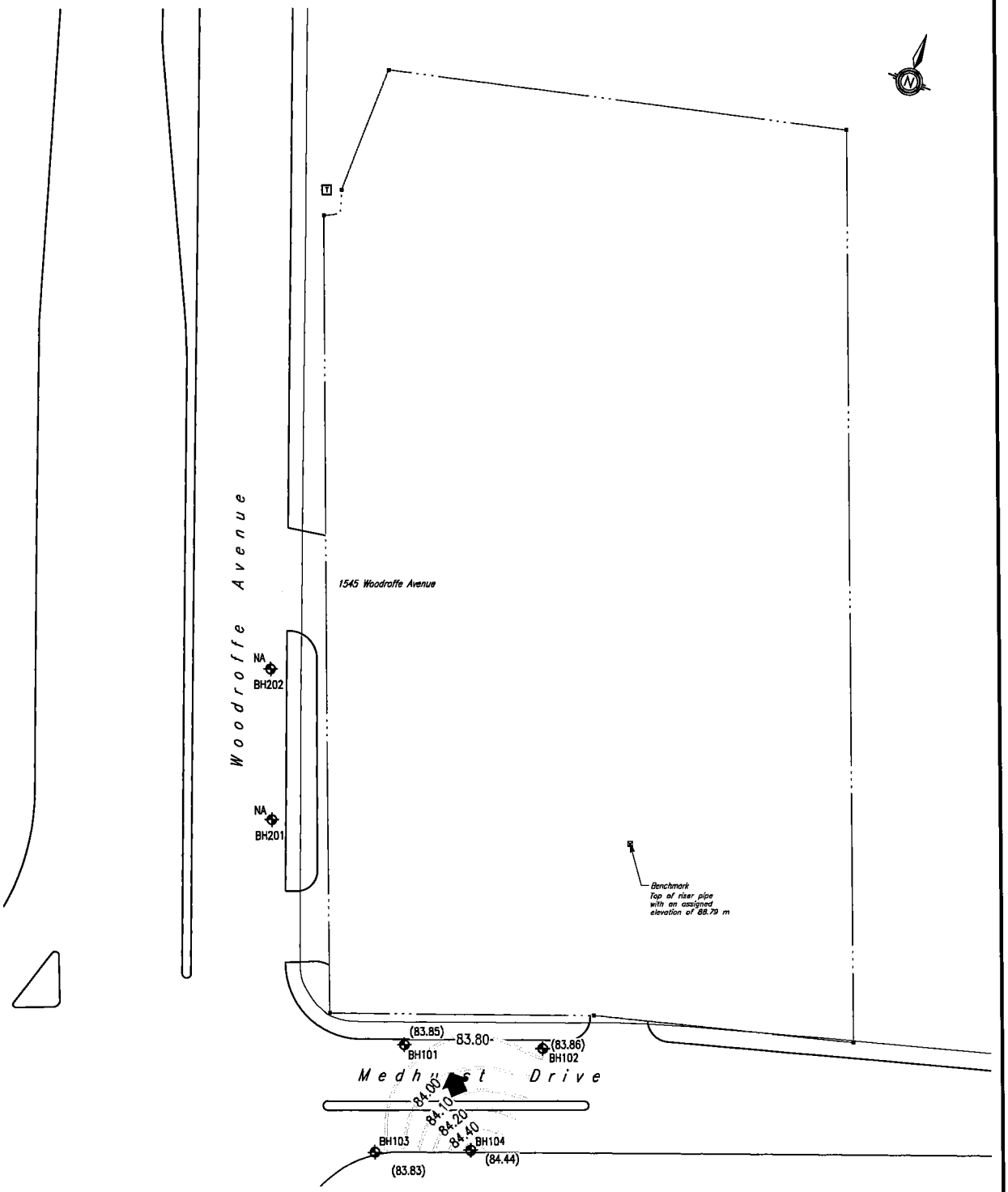
Holly Losignore, B.Sc.

PROFESSIONAL GEOSCIENTIST
JOHN M. HALSTEAD
PRACTISING MEMBER
1334
ONTARIO

John Halstead, M.Sc., Geo.

Distribution: (1) Imperial Oil Environmental Services
(1)Technical Standards and Safety Authority (cd)

W:\8000-999\8518#00\8518#02\8518T0214.L01(P2)jf.docx



LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Monitoring Well
- 2010/12/31 Date Format: yyyy/mm/dd
- Inferred Direction of Groundwater Flow
- 49.00 Potentiometric Surface Contour with Elevation, metres
- (49.00) Potentiometric Surface Elevation, metres
- (49.00)* Value Not Used for Contouring
- NA Well Not Accessible

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

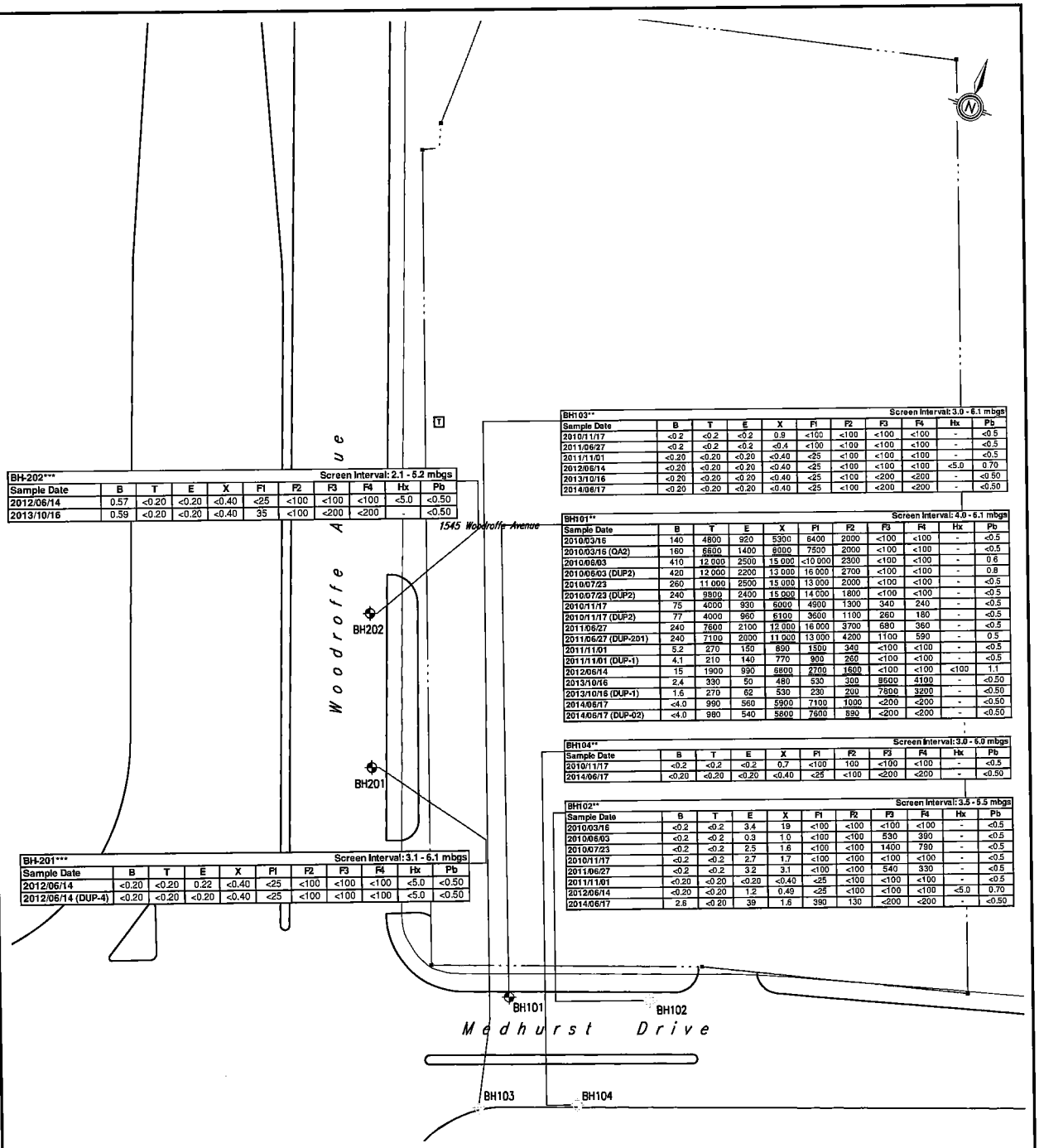
0 5 10 15 20 25m

Original Scale 1:500

Elevation of the Groundwater Potentiometric Surface
2014/06/16
Imperial Oil
Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: DLP	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518M140	Date: 2014/08/20
PARSONS		Drawing No.: 1

Rel. 3-34-P



BH202* — Screen Interval: 2.1 - 5.2 mbgs**

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2012/06/14	0.57	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50
2013/10/16	0.59	<0.20	<0.20	<0.40	35	<100	<200	<200	-	<0.50

BH201* — Screen Interval: 3.1 - 6.1 mbgs**

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2012/06/14	<0.20	<0.20	0.22	<0.40	<25	<100	<100	<100	<5.0	<0.50
2012/06/14 (DUP-4)	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50

BH103 — Screen Interval: 3.0 - 6.1 mbgs**

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/11/17	<0.2	<0.2	<0.2	0.9	<100	<100	<100	<100	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/11/01	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2012/06/14	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	0.70
2013/10/16	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50
2014/06/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50

BH101 — Screen Interval: 4.0 - 6.1 mbgs**

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	140	4800	920	5300	6400	2000	<100	<100	-	<0.5
2010/03/16 (QA2)	160	6600	1400	8000	7500	2000	<100	<100	-	<0.5
2010/06/03	410	12 000	2500	15 000	<10 000	2300	<100	<100	-	0.6
2010/06/03 (DUP2)	420	12 000	2200	13 000	16 000	2700	<100	<100	-	0.8
2010/07/23	260	11 000	2500	13 000	13 000	2000	<100	<100	-	<0.5
2010/07/23 (DUP2)	240	9800	2400	15 000	14 000	1800	<100	<100	-	<0.5
2010/11/17	75	4000	930	5000	4900	1300	340	240	-	<0.5
2010/11/17 (DUP2)	77	4000	960	5100	3600	1100	260	180	-	<0.5
2011/06/27	240	7600	2100	12 000	16 000	3700	680	360	-	<0.5
2011/06/27 (DUP-201)	240	7100	2000	11 000	13 000	4200	1100	590	-	0.5
2011/11/01	5.2	270	150	890	1500	340	<100	<100	-	<0.5
2011/11/01 (DUP-1)	4.1	210	140	770	900	260	<100	<100	-	<0.5
2012/06/14	15	1900	990	6800	2700	1600	<100	<100	<100	1.1
2013/10/16	2.4	330	50	480	530	300	8600	4100	-	<0.50
2013/10/16 (DUP-1)	1.6	270	62	530	230	200	7800	3200	-	<0.50
2014/06/17	<4.0	990	560	5900	7100	1000	<200	<200	-	<0.50
2014/06/17 (DUP-02)	<4.0	980	540	5800	7600	890	<200	<200	-	<0.50

BH104 — Screen Interval: 3.0 - 6.0 mbgs**

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/11/17	<0.2	<0.2	<0.2	0.7	<100	100	<100	<100	-	<0.5
2014/06/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50

BH102 — Screen Interval: 3.5 - 5.5 mbgs**

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	<0.2	<0.2	3.4	19	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	<0.2	0.3	1.0	<100	<100	530	390	-	<0.5
2010/07/23	<0.2	<0.2	2.5	1.6	<100	<100	1400	790	-	<0.5
2010/11/17	<0.2	<0.2	2.7	1.7	<100	<100	<100	<100	-	<0.5
2011/06/27	<0.2	<0.2	3.2	3.1	<100	<100	540	330	-	<0.5
2011/11/01	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2012/06/14	<0.20	<0.20	1.2	0.49	<25	<100	<100	<100	<5.0	0.70
2014/06/17	2.6	<0.20	39	1.6	390	130	<200	<200	-	<0.50

LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/L — Micrograms Per Litre

Analytical Results

All Results Reported in µg/L

- Location Where Most Recent Groundwater Sample did Applicable Criteria for All Parameters that Were Analyzed, Shown in Green
- Location Where Most Recent Groundwater Sample Exceeded Applicable Criteria for at Least One Parameter that Was Analyzed, Shown in Red
- Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple
- 1234 — Exceedances of Criteria, Shown in Red and Bold
- 1234 mm, Sheen — Free Product Apparent Thickness (in mm), or Sheen, Shown as Purple and Bold
- mbgs — Metres Below Ground Surface
- DUP — Field Duplicate Sample
- - — Not Analyzed
- < — Result Less Than Reportable Detection Limit

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/L	1900	5900	28 000	5900	NS	NS	NS	NS	NS	32
Standard** µg/L	44	18 000	2300	4200	750	150	500	500	51	25
Standard*** µg/L	430	18 000	2300	4200	750	150	500	500	51	25

B-Benzene T-Toluene E-Ethylbenzene X-Total Xylenes F1-F4-CCME CWS Petroleum Hydrocarbon Fractions Hx-Hexane Pb-Lead

* MOE Table 3 (2004) All types of property use, coarse textured soils.
** MOE Table 3 (2011) All types of property use, coarse textured soils.
*** MOE Table 3 (2011) All types of property use, medium and fine textured soils.
NS No standard

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Scale 1:500

Ref.: S-34-P

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead
Imperial Oil
Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: JL	Page Size: 11 x 17 In	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518G130	Date: 2014/08/22
PARSONS		Drawing No.: 2

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH101	88.19	88.27	4.0 - 6.1	2010/03/16	10%	ND	4.39	83.88
				2010/06/03	50	ND	4.41	83.87
				2010/07/23	10%	ND	4.50	83.77
				2010/11/17	10%	ND	4.41	83.86
				2011/06/27	20%	ND	4.21	84.06
				2011/10/31	25%	ND	4.55	83.72
	88.18			2012/06/13	11%	ND	4.62	83.65
				2013/10/16	75	ND	4.38	83.89
				2014/06/16	10%	ND	4.42	83.85
BH102	88.08	88.22	3.5 - 5.5	2010/03/16	25%	ND	4.32	83.90
				2010/06/03	175	ND	4.35	83.87
				2010/07/23	5%	ND	4.44	83.78
				2010/11/17	150	ND	4.35	83.87
				2011/06/27	5%	ND	4.17	84.05
				2011/10/31	5%	ND	4.50	83.72
	88.08			2012/06/13	27%	ND	4.55	83.67
				2013/10/16	NM	ND	5.17	83.05
				2014/06/16	52%	ND	4.36	83.86
BH103	88.84	88.92	3.0 - 6.1	2010/11/17	175	ND	4.39	84.53
				2011/06/27	80	ND	4.28	84.64
				2011/10/31	110	ND	4.62	84.30
	88.22			2012/06/13	160	ND	5.30	83.62
				2013/10/16	<5	ND	6.02	82.90
				2014/06/16	11%	ND	5.08	83.84
BH104	88.77	88.85	3.0 - 6.0	2010/11/17	175	ND	4.48	84.37
				2011/06/27	NM	NM	NM	NM
				2011/10/31	NA	NA	NA	NA
				2012/06/13	NM	NM	NM	NM
				2013/10/16	NM	NM	NM	NM
				2014/06/16	10	ND	4.41	84.44

1 - Relative to local benchmark (BH5 top of riser pipe) with an assigned elevation of 88.79 m. Note BH103 was cut down and re-surveyed after the well was monitored on June 13, 2012.
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75
m - metres
mbgs - metres below ground surface
mm - millimetres
NA - Well not accessible
ND - Not detected
NM - Well not monitored
* - Water level above top of screen

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH-201	87.95	88.09	3.1 - 6.1	2012/06/13 2013/10/16 2014/06/16	220 NA NA	ND NA NA	4.53 NA NA	83.56 NA NA
BH-202	87.89	88.00	2.1 - 5.2	2012/06/13 2013/10/16 2014/06/16	240 16% NA	ND ND NA	4.47 5.20 NA	83.54 82.80 NA

1 - Relative to local benchmark (BH5 top of riser pipe) with an assigned elevation of 88.79 m. Note: BH-201 and BH-202 wells were cut down and re-surveyed after monitoring occurred on 2012/06/13.
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75
m - metres
mbgs - metres below ground surface
mm - millimetres
NA - Well not accessible
ND - Not detected
NR - No reading
* - Water level above top of screen

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH101	DUP-02 FIELD DUPLICATE BH101	BH102	BH103	BH104	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4A4248	B4A4248	B4A4282	B4A4248	B4A4282	
MAXXAM Sample ID	001878	001880	002025	001879	002026	
Date Sampled (yyyy/mm/dd)	2014/06/17	2014/06/17	2014/06/17	2014/06/17	2014/06/17	
PARAMETERS						
Benzene	<4.0	<4.0	2.6	<0.20	<0.20	44
Toluene	990	980	<0.20	<0.20	<0.20	18 000
Ethylbenzene	560	540	39	<0.20	<0.20	2300
Total Xylenes	**5900**	**5800**	1.6	<0.40	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	**7100**	**7600**	390	<25	<25	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	**1000**	**890**	130	<100	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	<200	<200	<200	<200	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	<200	<200	<200	<200	500
Lead	<0.50	<0.50	<0.50	<0.50	<0.50	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, coarse textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	BH101	DUP-02 FIELD DUPLICATE BH101	BH102	BH103	BH104	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4A4248	B4A4248	B4A4282	B4A4248	B4A4282	
MAXXAM Sample ID	001878	001880	002025	001879	002026	
Date Sampled (yyyy/mm/dd)	2014/06/17	2014/06/17	2014/06/17	2014/06/17	2014/06/17	
PARAMETERS						
Ethylene Dibromide	<40	<40	<1.0	<0.20	<0.20	0.25
1,2-Dichloroethane	<40	<40	<1.0	<0.20	<0.20	1.6
Methyl t-butyl ether	<40	<40	<1.0	<0.20	<0.20	190

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, coarse textured soils

"-" - Not analyzed

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

APPENDIX A

LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by Parsons Canada Ltd. (Parsons), for Imperial Oil. It is intended for the sole and exclusive use of Imperial Oil, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and Parsons, make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by Parsons, with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Parsons. Nothing in this report is intended to constitute or provide a legal opinion.

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071007
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4248
Received: 2014/06/18, 13:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	3	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071007
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4248
Received: 2014/06/18, 13:00

Encryption Key Kudrat Bajwa
Kudrat Bajwa
26 Jun 2014 16:23:21 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4A4248
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		001878	001879	001880	001880		
Sampling Date		2014/06/17 12:45	2014/06/17 11:00	2014/06/17 12:45	2014/06/17 12:45		
COC Number		473021-02-01	473021-02-01	473021-02-01	473021-02-01		
	Units	**BH101**	**BH103**	**DUP-02**	**DUP-02 Lab-Dup**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	3654015

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4248
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		001878		001879	001879		001880		
Sampling Date		2014/06/17 12:45		2014/06/17 11:00	2014/06/17 11:00		2014/06/17 12:45		
COC Number		473021-02-01		473021-02-01	473021-02-01		473021-02-01		
	Units	**BH101**	**RDL**	**BH103**	**BH103 Lab-Dup**	**RDL**	**DUP-02**	**RDL**	**QC Batch**
Benzene	ug/L	<4.0	4.0	<0.20		0.20	<4.0	4.0	3650999
Toluene	ug/L	990	4.0	<0.20		0.20	980	4.0	3650999
Ethylbenzene	ug/L	560	4.0	<0.20		0.20	540	4.0	3650999
o-Xylene	ug/L	1700	4.0	<0.20		0.20	1600	4.0	3650999
p+m-Xylene	ug/L	4200	8.0	<0.40		0.40	4100	8.0	3650999
Total Xylenes	ug/L	5900	8.0	<0.40		0.40	5800	8.0	3650999
F1 (C6-C10)	ug/L	15000	500	<25		25	15000	500	3650999
F1 (C6-C10) - BTEX	ug/L	7100	500	<25		25	7600	500	3650999
F2 (C10-C16 Hydrocarbons)	ug/L	1000	100	<100	<100	100	890	100	3652811
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	<200	<200	200	<200	200	3652811
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	<200	<200	200	<200	200	3652811
Reached Baseline at C50	ug/L	Yes		Yes	Yes		Yes		3652811
Extraction Surrogate Recovery (%)									
o-Terphenyl	%	100		99	97		99		3652811
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	101		102			102		3650999
4-Bromofluorobenzene	%	99		95			100		3650999
D10-Ethylbenzene	%	86		91			91		3650999
D4-1,2-Dichloroethane	%	98		95			98		3650999

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4248
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		001878		001879		001880		
Sampling Date		2014/06/17 12:45		2014/06/17 11:00		2014/06/17 12:45		
COC Number		473021-02-01		473021-02-01		473021-02-01		
	Units	**BH101**	**RDL**	**BH103**	**RDL**	**DUP-02**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<40	40	<0.20	0.20	<40	40	3646859
Ethylene Dibromide	ug/L	<40	40	<0.20	0.20	<40	40	3646859
Methyl t-butyl ether (MTBE)	ug/L	<40	40	<0.20	0.20	<40	40	3646859
Instrument Surrogate Recovery (%)								
4-Bromofluorobenzene	%	100		103		101		3646859
D4-1,2-Dichloroethane	%	96		94		98		3646859
D8-Toluene	%	99		106		99		3646859

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4248
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: 001878
Sample ID: BH101
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652811	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam ID: 001879
Sample ID: BH103
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652811	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam ID: 001879 Dup
Sample ID: BH103
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652811	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu

Maxxam ID: 001880
Sample ID: DUP-02
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3652811	2014/06/24	2014/06/25	Zhiyue (Frank) Zhu
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam ID: 001880 Dup
Sample ID: DUP-02
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4248
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.3°C

Sample 001878-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.
F1-BTEX Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Sample 001880-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

F1-BTEX Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4248
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3646859	SLM	Method Blank	4-Bromofluorobenzene	2014/06/21		96	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		100	%	70 - 130
			1,2-Dichloroethane	2014/06/21	<0.20		ug/L	
			Ethylene Dibromide	2014/06/21	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/21	<0.20		ug/L	
3650999	AGA	Method Blank	1,4-Difluorobenzene	2014/06/24		99	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		101	%	70 - 130
			D10-Ethylbenzene	2014/06/24		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		98	%	70 - 130
			Benzene	2014/06/24	<0.20		ug/L	
			Toluene	2014/06/24	<0.20		ug/L	
			Ethylbenzene	2014/06/24	<0.20		ug/L	
			o-Xylene	2014/06/24	<0.20		ug/L	
			p+m-Xylene	2014/06/24	<0.40		ug/L	
			Total Xylenes	2014/06/24	<0.40		ug/L	
			F1 (C6-C10)	2014/06/24	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/24	<25		ug/L	
3652811	ZZ	Method Blank	o-Terphenyl	2014/06/24		98	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/24	<200		ug/L	
3654015	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/26	<0.50		ug/L	
3652811	ZZ	RPD [001879-02]	F2 (C10-C16 Hydrocarbons)	2014/06/25	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/06/25	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/06/25	NC		%	30
3654015	PBA	RPD [001880-03]	Dissolved Lead (Pb)	2014/06/26	NC		%	20
3652811	ZZ	Matrix Spike [001878-02]	o-Terphenyl	2014/06/25		101	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/25		NC	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/25		103	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/25		102	%	50 - 130
3654015	PBA	Matrix Spike [001880-03]	Dissolved Lead (Pb)	2014/06/26		98	%	80 - 120
3646859	SLM	LCS	4-Bromofluorobenzene	2014/06/21		102	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		102	%	70 - 130
			1,2-Dichloroethane	2014/06/21		92	%	70 - 130
			Ethylene Dibromide	2014/06/21		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/21		92	%	70 - 130
3650999	AGA	LCS	1,4-Difluorobenzene	2014/06/24		102	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		98	%	70 - 130
			D10-Ethylbenzene	2014/06/24		90	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		100	%	70 - 130
			Benzene	2014/06/24		105	%	70 - 130
			Toluene	2014/06/24		98	%	70 - 130
			Ethylbenzene	2014/06/24		108	%	70 - 130
			o-Xylene	2014/06/24		107	%	70 - 130
			p+m-Xylene	2014/06/24		99	%	70 - 130
			F1 (C6-C10)	2014/06/24		100	%	70 - 130
3652811	ZZ	LCS	o-Terphenyl	2014/06/25		102	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/25		93	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/25		97	%	60 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4248
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			F4 (C34-C50 Hydrocarbons)	2014/06/25		97	%	60 - 130
3654015	PBA	LCS	Dissolved Lead (Pb)	2014/06/26		97	%	80 - 120

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.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

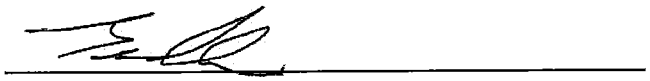
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4248
Report Date: 2014/06/26

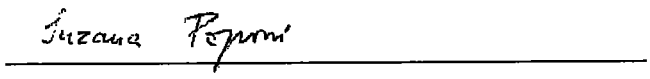
Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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



Brad Newman, Scientific Specialist



Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 473021-02-01

473021

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~90 Wynford Dr 5th Floor Don Mills ON M3C 1K5~~ 100 Duncan Mill Rd. Toronto ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca;	Email: Holly.Losignore@parsons.com;
Phone: (416) ~~441-2686~~ 442 5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE	VOC	BTEX	Petroleum Hydrocarbons F1 to F4	Metals (Lead only)
1	BH101	X				12	2014/06/17	12:45	X		X	X	X	X	X
2	BH103	X				12	2014/06/17	11:00	X		X	X	X	X	X
3	DUP-02	X				12	2014/06/17	12:45	X		X	X	X	X	X
4															
5															
6															
7															
8															
9															
10															

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
(Please indicate which Reg. version and if RSC required)
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
☐ ODWS ☐ PWQO VC/C
☐ Other Coarse grained

SPECIAL INSTRUCTIONS: Test samples as per TDG
ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT	✓			2	2	3°C
INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
INTACT						

LAB USE ONLY
MAXXAM JOB # B4A4248
SAMPLES
LABELED BY: HGL
VERIFIED BY: AKP

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Libby Kuit	2014/06/17	19:00	1. H.S Grewal	HARMAN GREWAL	2014/06/18	13:00
2.				2.			
3.				3.			

COC – 1012 (2013) IOL – ON

White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
Sampling Date: 2014/06/17

Location: *Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario*
Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*
Laboratory Job Number: *B4A4248*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD	X			
Matrix Spike Recovery	X			
Lab Control Sample Recovery/Spiked Blank	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	*All field QC samples met the alert limits.*
Trip Blank Concentration			X	
Field Duplicate RPD	X			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*
Review Date: *2014/07/17*
Revision Date (if applicable):

Data Reviewed by (Signature):
Revised by (Signature):

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-03-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071012
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4282
Received: 2014/06/18, 13:00

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	2	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 473021-03-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/26
Report #: R3071012
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A4282
Received: 2014/06/18, 13:00

Encryption Key Kudrat Bajwa
Kudrat Bajwa
26 Jun 2014 16:24:25 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4282
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		002025	002026		
Sampling Date		2014/06/17 13:20	2014/06/17 10:25		
COC Number		473021-03-01	473021-03-01		
	Units	**BH102**	**BH104**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	3654015

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4282
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		002025	002026		
Sampling Date		2014/06/17 13:20	2014/06/17 10:25		
COC Number		473021-03-01	473021-03-01		
	Units	**BH102**	**BH104**	**RDL**	**QC Batch**
Benzene	ug/L	2.6	<0.20	0.20	3650999
Toluene	ug/L	<0.20	<0.20	0.20	3650999
Ethylbenzene	ug/L	39	<0.20	0.20	3650999
o-Xylene	ug/L	<0.20	<0.20	0.20	3650999
p+m-Xylene	ug/L	1.6	<0.40	0.40	3650999
Total Xylenes	ug/L	1.6	<0.40	0.40	3650999
F1 (C6-C10)	ug/L	430	<25	25	3650999
F1 (C6-C10) - BTEX	ug/L	390	<25	25	3650999
F2 (C10-C16 Hydrocarbons)	ug/L	130	<100	100	3653031
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	3653031
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	3653031
Reached Baseline at C50	ug/L	Yes	Yes		3653031
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	99	102		3653031
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105	105		3650999
4-Bromofluorobenzene	%	97	98		3650999
D10-Ethylbenzene	%	96	95		3650999
D4-1,2-Dichloroethane	%	95	95		3650999

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4282
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		002025		002026		
Sampling Date		2014/06/17 13:20		2014/06/17 10:25		
COC Number		473021-03-01		473021-03-01		
	Units	**BH102**	**RDL**	**BH104**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<1.0	1.0	<0.20	0.20	3646859
Ethylene Dibromide	ug/L	<1.0	1.0	<0.20	0.20	3646859
Methyl t-butyl ether (MTBE)	ug/L	<1.0	1.0	<0.20	0.20	3646859
Instrument Surrogate Recovery (%)						
4-Bromofluorobenzene	%	102		104		3646859
D4-1,2-Dichloroethane	%	96		99		3646859
D8-Toluene	%	103		102		3646859

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4282
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: 002025
Sample ID: BH102
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3653031	2014/06/24	2014/06/25	Nicoleta Ciublea
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam ID: 002026
Sample ID: BH104
Matrix: Water

Collected: 2014/06/17
Relinquished: 2014/06/17
Received: 2014/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3650999	N/A	2014/06/24	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3653031	2014/06/24	2014/06/25	Nicoleta Ciublea
Dissolved Metals by ICPMS	ICP/MS	3654015	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3646859	N/A	2014/06/22	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4282
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Sample 002025-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success through Science®

Maxxam Job #: B4A4282
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3646859	SLM	Method Blank	4-Bromofluorobenzene	2014/06/21		96	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		100	%	70 - 130
			1,2-Dichloroethane	2014/06/21	<0.20		ug/L	
			Ethylene Dibromide	2014/06/21	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/21	<0.20		ug/L	
3650999	AGA	Method Blank	1,4-Difluorobenzene	2014/06/24		99	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		101	%	70 - 130
			D10-Ethylbenzene	2014/06/24		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		98	%	70 - 130
			Benzene	2014/06/24	<0.20		ug/L	
			Toluene	2014/06/24	<0.20		ug/L	
			Ethylbenzene	2014/06/24	<0.20		ug/L	
			o-Xylene	2014/06/24	<0.20		ug/L	
			p+m-Xylene	2014/06/24	<0.40		ug/L	
			Total Xylenes	2014/06/24	<0.40		ug/L	
			F1 (C6-C10)	2014/06/24	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/24	<25		ug/L	
3653031	NCI	Method Blank	o-Terphenyl	2014/06/24		99	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/24	<200		ug/L	
3654015	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/26	<0.50		ug/L	
3646859	SLM	LCS	4-Bromofluorobenzene	2014/06/21		102	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/21		97	%	70 - 130
			D8-Toluene	2014/06/21		102	%	70 - 130
			1,2-Dichloroethane	2014/06/21		92	%	70 - 130
			Ethylene Dibromide	2014/06/21		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/21		92	%	70 - 130
3650999	AGA	LCS	1,4-Difluorobenzene	2014/06/24		102	%	70 - 130
			4-Bromofluorobenzene	2014/06/24		98	%	70 - 130
			D10-Ethylbenzene	2014/06/24		90	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/24		100	%	70 - 130
			Benzene	2014/06/24		105	%	70 - 130
			Toluene	2014/06/24		98	%	70 - 130
			Ethylbenzene	2014/06/24		108	%	70 - 130
			o-Xylene	2014/06/24		107	%	70 - 130
			p+m-Xylene	2014/06/24		99	%	70 - 130
			F1 (C6-C10)	2014/06/24		100	%	70 - 130
3653031	NCI	LCS	o-Terphenyl	2014/06/24		101	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/24		102	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/24		104	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/24		102	%	60 - 130
3654015	PBA	LCS	Dissolved Lead (Pb)	2014/06/26		97	%	80 - 120

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A4282
Report Date: 2014/06/26

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE., OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 473021-03-01

473021

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~90 Wynford Dr 5th Floor Don Mills ON M3C 1K5~~ 1 Duncan Mill Rd Toronto ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca;	Email: Holly.Losignore@parsons.com;
Phone: (416) ~~441-7865~~ 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION (REQUIRED)	VOC	BTEX	Petroleum Hydrocarbons F1-F4	Metals (Lead only)
1	BH102	X				12	2014/06/18	15:20	X		X	X	X	X
2	BH104	X				12	2014/06/18	15:35	X		X	X	X	X
3														
4														
5														
6														
7														
8														
9														
10														

VOC (3): ethylene dibromide; 1,2-dichloroethane; MTBE

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO Y/C/C
☐ Other ____ coarse grained

SPECIAL INSTRUCTIONS: Test samples as per TDG
ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT	✓			1°C	1°C	2°C
CUSTODY SEAL INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

LAB USE ONLY
MAXXAM JOB # B4A4282
SAMPLES
LABELED BY: HG1
VERIFIED BY: AKP

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Libby Kuit	2014/06/19	19:00	1.	FANG WANG	2014/06/18	13:00
2.				2.			
3.				3.			

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
Sampling Date: 2014/06/17

Location: *Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario*
Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*
Laboratory Job Number: *B4A4282*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Lab Control Sample Recovery/Spiked Blank	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	*No field QC samples were submitted.*
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*
Review Date: *2014/07/17*
Revision Date (if applicable):

Data Reviewed by (Signature):
Revised by (Signature):

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 465501-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3074125
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A7008
Received: 2014/06/20, 14:15

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020
Volatile Organic Compounds in Water	2	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. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success Through Science®

Task Order#: 4410175351
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 465501-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/06/30
Report #: R3074125
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4A7008
Received: 2014/06/20, 14:15

Encryption Key Kudrat Bajwa
Kudrat Bajwa
30 Jun 2014 11:15:59 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		WJ8186	WJ8187		
Sampling Date		2014/06/18 16:30	2014/06/18 16:45		
COC Number		465501-02-01	465501-02-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	3653421

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		WJ8186	WJ8187		
Sampling Date		2014/06/18 16:30	2014/06/18 16:45		
COC Number		465501-02-01	465501-02-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	3654450
Toluene	ug/L	<0.20	<0.20	0.20	3654450
Ethylbenzene	ug/L	<0.20	<0.20	0.20	3654450
o-Xylene	ug/L	<0.20	<0.20	0.20	3654450
p+m-Xylene	ug/L	<0.40	<0.40	0.40	3654450
Total Xylenes	ug/L	<0.40	<0.40	0.40	3654450
F1 (C6-C10)	ug/L	<25	<25	25	3654450
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	3654450
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	3655406
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	3655406
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	3655406
Reached Baseline at C50	ug/L	Yes	Yes		3655406
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	94	95		3655406
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105	105		3654450
4-Bromofluorobenzene	%	99	96		3654450
D10-Ethylbenzene	%	97	97		3654450
D4-1,2-Dichloroethane	%	108	109		3654450

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		WJ8186	WJ8187		
Sampling Date		2014/06/18 16:30	2014/06/18 16:45		
COC Number		465501-02-01	465501-02-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	<0.50	0.50	3651573
1,1-Dichloroethane	ug/L	<0.10	<0.10	0.10	3651573
1,2-Dichloroethane	ug/L	<0.20	<0.20	0.20	3651573
1,1-Dichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
cis-1,2-Dichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
trans-1,2-Dichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
Ethylene Dibromide	ug/L	<0.20	<0.20	0.20	3651573
Methyl t-butyl ether (MTBE)	ug/L	<0.20	<0.20	0.20	3651573
Tetrachloroethylene	ug/L	<0.10	<0.10	0.10	3651573
1,1,1-Trichloroethane	ug/L	<0.10	<0.10	0.10	3651573
1,1,2-Trichloroethane	ug/L	<0.20	<0.20	0.20	3651573
Trichloroethylene	ug/L	<0.10	<0.10	0.10	3651573
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	3651573
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	<0.20	0.20	3651573
Instrument Surrogate Recovery (%)					
4-Bromofluorobenzene	%	96	96		3651573
D4-1,2-Dichloroethane	%	103	101		3651573
D8-Toluene	%	97	98		3651573

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: WJ8186
Sample ID: FIELD BLANK-01
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653421	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam ID: WJ8187
Sample ID: TRIP BLANK-01
Matrix: Water

Collected: 2014/06/18
Relinquished: 2014/06/19
Received: 2014/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3654450	N/A	2014/06/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3655406	2014/06/26	2014/06/26	Dorina Popa
Dissolved Metals by ICPMS	ICP/MS	3653421	N/A	2014/06/26	Prempal Bhatti
Volatile Organic Compounds in Water	P&T/MS	3651573	N/A	2014/06/25	Blair Gannon

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3651573	BG1	Method Blank	4-Bromofluorobenzene	2014/06/25		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/06/25	<0.50		ug/L	
			1,1-Dichloroethane	2014/06/25	<0.10		ug/L	
			1,2-Dichloroethane	2014/06/25	<0.20		ug/L	
			1,1-Dichloroethylene	2014/06/25	<0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/06/25	<0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/06/25	<0.10		ug/L	
			Ethylene Dibromide	2014/06/25	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/06/25	<0.20		ug/L	
			Tetrachloroethylene	2014/06/25	<0.10		ug/L	
			1,1,1-Trichloroethane	2014/06/25	<0.10		ug/L	
			1,1,2-Trichloroethane	2014/06/25	<0.20		ug/L	
			Trichloroethylene	2014/06/25	<0.10		ug/L	
			Vinyl Chloride	2014/06/25	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/06/25	<0.20		ug/L	
3653421	PBA	Method Blank	Dissolved Lead (Pb)	2014/06/26	<0.50		ug/L	
3654450	SHK	Method Blank	1,4-Difluorobenzene	2014/06/26		101	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		99	%	70 - 130
			D10-Ethylbenzene	2014/06/26		93	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		105	%	70 - 130
			Benzene	2014/06/26	<0.20		ug/L	
			Toluene	2014/06/26	<0.20		ug/L	
			Ethylbenzene	2014/06/26	<0.20		ug/L	
			o-Xylene	2014/06/26	<0.20		ug/L	
			p+m-Xylene	2014/06/26	<0.40		ug/L	
			Total Xylenes	2014/06/26	<0.40		ug/L	
			F1 (C6-C10)	2014/06/26	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/06/26	<25		ug/L	
3655406	DPO	Method Blank	o-Terphenyl	2014/06/26		97	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/06/26	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/06/26	<200		ug/L	
3651573	BG1	LCS	4-Bromofluorobenzene	2014/06/25		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/25		96	%	70 - 130
			D8-Toluene	2014/06/25		100	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/06/25		97	%	60 - 140
			1,1-Dichloroethane	2014/06/25		96	%	70 - 130
			1,2-Dichloroethane	2014/06/25		94	%	70 - 130
			1,1-Dichloroethylene	2014/06/25		109	%	70 - 130
			cis-1,2-Dichloroethylene	2014/06/25		95	%	70 - 130
			trans-1,2-Dichloroethylene	2014/06/25		99	%	70 - 130
			Ethylene Dibromide	2014/06/25		97	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/06/25		97	%	70 - 130
			Tetrachloroethylene	2014/06/25		98	%	70 - 130
			1,1,1-Trichloroethane	2014/06/25		96	%	70 - 130
			1,1,2-Trichloroethane	2014/06/25		96	%	70 - 130
			Trichloroethylene	2014/06/25		94	%	70 - 130
			Vinyl Chloride	2014/06/25		88	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Trichlorofluoromethane (FREON 11)	2014/06/25		95	%	70 - 130
3653421	PBA	LCS	Dissolved Lead (Pb)	2014/06/26		97	%	80 - 120
3654450	SHK	LCS	1,4-Difluorobenzene	2014/06/26		97	%	70 - 130
			4-Bromofluorobenzene	2014/06/26		104	%	70 - 130
			D10-Ethylbenzene	2014/06/26		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/06/26		102	%	70 - 130
			Benzene	2014/06/26		108	%	70 - 130
			Toluene	2014/06/26		111	%	70 - 130
			Ethylbenzene	2014/06/26		114	%	70 - 130
			o-Xylene	2014/06/26		120	%	70 - 130
			p+m-Xylene	2014/06/26		111	%	70 - 130
			F1 (C6-C10)	2014/06/26		80	%	70 - 130
3655406	DPO	LCS	o-Terphenyl	2014/06/26		100	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/06/26		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/06/26		93	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/06/26		98	%	60 - 130

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4A7008
Report Date: 2014/06/30

Parsons
Task Order#: 4410175351, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVE. AT MEDHURST, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Abdi Mohamud, Senior Analyst

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

Suzana Popovic, Supervisor, Hydrocarbons

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM -OF-CUSTODY RECORD

NALYSIS REQUESTED

C of C # 465501-02-01

465501

INVOICE INFORMATION	REPORT INFORMATION
Company Name:Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name:Parsons
Contact Name: Lorne Wedge	Contact Name: Holly Losignore
Address: ~~90 Wynford Dr 5th Floor~~ ~~Don Mills ON M3C 1K5~~ 1 Duncan Mill Rd Toronto, ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: r.lorne.wedge@esso.ca	Email: Holly.Losignore@parsons.com;
Phone: ~~(416) (416) 442-5128~~ 442-5138	Phone: (905) 569-4111 x
Sampler Name (Print): Libby Kuit	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 & BTEX	F2-F4	Lead	VOC	VOC (14): ethylene dibromide, 1,2-dichloroethane, 1,1-dichloroethene, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, vinyl chloride, 1,1,1,2-tetrachloroethane, 1,1,2-trichloroethane, MTBE, Freon-11, Freon-12
1	Field Blank-01	✓				12	2014/06/18	16:30	✓		✓	✓	✓	✓	
2	Trip Blank-01	✓				8	2014/06/18	16:45			✓	✓	✓	✓	
3															
4															
5															
6															
7															
8															
9															
10															

IOL SITE LOCATION: at Medhurst
1545 Woodroffe Ave., Ottawa, ON

IOL SITE # (if applicable):
N/A

IOL PROJECT # (if applicable):
MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM:
4410175351-10

REGULATORY CRITERIA / DETECTION LIMITS:
☑ REG 153 Table 3 ☐ 2004 ☑ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO I/C/C
☐ Other Fine to Medium Grained

SPECIAL INSTRUCTIONS:
Test samples as per TDG
ICE - YES

JARS USED AND NOT SUBMITTED
Enter N/A for Water
N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT	✓			1°C	1°C	2°C
INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
INTACT						

LAB USE ONLY
MAXXAM JOB #
B4A7008
SAMPLES
LABELED BY: ~~DK~~ HG
VERIFIED BY: DW

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Libby Kuit	2014/06/19	18:00	1.	HAGDALENA COP	2014/06/20	14:15
2.				2.			
3.				3.			

COC - 1012 (2013) IOL - ON White: Maxxam Yellow: Client

2014/06/20

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
Sampling Date: 2014/06/18

Location: *Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario*
Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02*
Laboratory Job Number: *B4A7008*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):
Review Date: *2014/07/17*
Revision Date (if applicable): Revised by (Signature):

APPENDIX C

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

There were no lab or field QA/QC issues identified in this report that need to be discussed in detail.

The groundwater field QA/QC program consisted of one field duplicate, one field blank, and one trip blank samples for the analysis of BTEX, PHC fractions F1 to F4, lead, and VOCs.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit.

The designated field duplicate RPD alert limits are presented in Tables C-1 and C-2 for groundwater. As indicated, all of the RPDs were within acceptable limits.

The water trip blank and field blank data were compared to the alert limits and are presented in Tables C-3 and C-4. As indicated, all of the RPDs were within acceptable limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for groundwater samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. No laboratory QA/QC issues were identified.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE C-1

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH101	RDL	DUP-02 FIELD DUPLICATE BH101	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B4A4248		B4A4248			
Maxxam Sample ID	1878		1880			
Date Sampled (yyyy/mm/dd)	2014/06/17		2014/06/17			
PARAMETERS						
Benzene	<4.0	4.0	<4.0	4.0	NC	80
Toluene	990	4.0	980	4.0	1%	80
Ethylbenzene	560	4.0	540	4.0	4%	80
Total Xylenes	5900	8.0	5800	8.0	2%	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	7100	500	7600	500	7%	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	1000	100	890	100	12%	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	200	<200	200	NC	80
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	200	<200	200	NC	80
Lead	<0.50	0.50	<0.50	0.50	NC	50

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-2

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	BH101	RDL	DUP-02 FIELD DUPLICATE BH101	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B4A4248		B4A4248			
Maxxam Sample ID	1878		1880			
Date Sampled (yyyy/mm/dd)	2014/06/17		2014/06/17			
PARAMETERS						
Ethylene Dibromide	<40	40	<40	40	NC	80
1,2-Dichloroethane	<40	40	<40	40	NC	80
Methyl t-butyl ether	<40	40	<40	40	NC	80

a - Alert limits used for field duplicate samples
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-3

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	RDL	FIELD BLANK-01		TRIP BLANK-01	
Maxxam Certificate of Analysis No.		B4A7008	EXCEEDS ALERT LIMIT (yes/no)	B4A7008	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		WJ8186		WJ8187	
Date Sampled (yyyy/mm/dd)		2014/06/18		2014/06/18	
PARAMETERS					
Benzene	0.20	<0.20	No	<0.20	No
Toluene	0.20	<0.20	No	<0.20	No
Ethylbenzene	0.20	<0.20	No	<0.20	No
Total Xylenes	0.40	<0.40	No	<0.40	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	25	<25	No	<25	No
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	No	<100	No
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	200	<200	No	<200	No
Petroleum Hydrocarbons F4 (>C34 - C50)	200	<200	No	<200	No
Lead	0.50	<0.50	No	<0.50	No

a - BTEX have been subtracted from the fraction

b - Naphthalene has not been subtracted from the fraction

c - PAHs have not been subtracted from the fraction

RDL - Reportable detection limit

"-" - Not analyzed

BOLD - Exceeds alert limit

Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX and lead; 2x RDL for petroleum hydrocarbons fractions F1 to F4.
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-4

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	RDL	FIELD BLANK-01		TRIP BLANK-01	
Maxxam Certificate of Analysis No.		B4A7008	EXCEEDS ALERT LIMIT (yes/no)	B4A7008	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		WJ8186		WJ8187	
Date Sampled (yyyy/mm/dd)		2014/06/18		2014/06/18	
PARAMETERS					
Ethylene Dibromide	0.20	<0.20	No	<0.20	No
Dichlorodifluoromethane	0.50	<0.50	No	<0.50	No
1,1-Dichloroethane	0.10	<0.10	No	<0.10	No
1,2-Dichloroethane	0.20	<0.20	No	<0.20	No
1,1-Dichloroethylene	0.10	<0.10	No	<0.10	No
cis-1,2-Dichloroethylene	0.10	<0.10	No	<0.10	No
trans-1,2-Dichloroethylene	0.10	<0.10	No	<0.10	No
Methyl t-butyl ether	0.20	<0.20	No	<0.20	No
Tetrachloroethylene	0.10	<0.10	No	<0.10	No
1,1,1-Trichloroethane	0.10	<0.10	No	<0.10	No
1,1,2-Trichloroethane	0.20	<0.20	No	<0.20	No
Trichloroethylene	0.10	<0.10	No	<0.10	No
Trichlorofluoromethane	0.20	<0.20	No	<0.20	No
Vinyl Chloride	0.20	<0.20	No	<0.20	No

RDL - Reportable detection limit

"-" - Not analyzed

BOLD - Exceeds alert limit

Note - Alert limits for field blanks and trip blanks are 5x RDL for VOCs.

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TECHNICAL STANDARDS and SAFETY AUTHORITY

14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario M8X 2X4
Toll free 1-877-682-8772
www.tssa.org

FS Inspection Report

Service Request #	**1442096**
Inspection Report #	**5111090**

Inspection Address: **1545 WOODROFFE AVE** **NEPEAN;ON** **CA K2G 1W2**	Reference Number(s): **000187218**	Inspection Completion Date: **AUG 25, 2014**
	Facility Type: **FS Gasoline Station - Self Serve**	Equipment Type:
Customer Name and Address: **6161278 CANADA INC** **1545 WOODROFFE AVE** **NEPEAN;ON** **CA K2G 1W2**	Task Type: FS-Periodic LF Inspection	
	The facility/equipment is inspected in accordance with Ontario's Technical Standards & Safety Act and the appropriate regulations and codes. When an Inspector's order is issued, time limits for compliance reflect the severity of the violation and serve to avoid disruption of service.	

Task Notes

FIND ATTACHED YOUR COPY OF THE FUEL SAFETY INSPECTION ON AUG 25 2014. SHOULD YOU HAVE ANY QUESTIONS ABOUT THIS REPORT, CONTACT DAVID NORMAN AT 613-2977422

If you have questions regarding your invoice, when received, contact TSSA billing department by telephone at (416)734-3555, or by e-mail at tssa_billing_team@tssa.org.

This inspector has no control over billing.

ON SITE FOR REGULAR AUDIT. ALL SUMP SENSORS INSTALLED AND WORKING.YEARLY TESTING UP TO DATE BY GP MAINTANCE. ALL FIRE EQUIPMENT AND SIGNAGE IN PLACE AND UP TO DATE. SITE HAS TLC 350 TO MONITOR TANKS. STAFF TRAINED AND SIGNED OFF. SITE IN COMPLIANCE AT THE TIME OF THIS INSPECTION.

Standard Notes

TSSA inspected the above mentioned location and did not find any non-compliances at the time of inspection.

Customer Signature & Position / Date:		**Inspector Name:** Norman, David	**Inspector Contact Number:** 613-284-8284
Report Received By:	**Customer Contact Number:**	**Inspector Email:** DNorman@tssa.org	**Inspector Fax:** 613-284-8296

As a not-for-profit regulatory authority, TSSA operates on a cost recovery basis. An Invoice will be issued for the Total Charges Incurred.
(Note: This is not an invoice)

Putting Public Safety First

1545 WOODROFFE AVENUE, OTTAWA - 1136452

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number: 5185-992V76 File Storage Number: SPILLS ACTION CENTRE
Module: Incident Reporting Module Type: Pollution Incident Report (PIR)
Cross Reference: (doc link) Task Link: 8756-992V9B
Originating Document: Created by: Scott Steeves
Incident Report Reference Number: 5185-992V76

Date Created: 2013/06/26 Date Completed:
Bring Forward Date: Bring Forward Reason:
Status: To be assigned
Program Water - Ground & Surface Activity: Pollution Incident Reports
Is this an air emission (measured or modelled) or wastewater (sewage) discharge exceedance that will become part of the Environmental Compliance Report?

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

To be determined Click here for Guidance

Hide Caller/PO Information for FOI Printing: No

Reported By: Name of Company:

First Name
Last Name
Martin
Ottawa Fire Dispatch Ottawa Fire
Contact Mailing Address
Civic Address: Unit Identifier:

Delivery Designator: Delivery Identifier:

Municipality: Postal Station: Province/State: Postal Code:
Ottawa Ontario
Telephone Number: Extension: Other Number: Email Address:
Fax

Date Reported to MOE: 2013/06/26 Time Reported to MOE: 18:47

Office Receiving Incident Report: Spills Action Centre
Incident Info Received By: Scott Steeves

MOE Response: Site Region: Eastern

Date of MOE Arrival at Scene: Time of MOE Arrival at Scene:

Master Incident Report Number:

SAC Action Class: Pollution Incident Reports (PIRs) and "Other" calls

Non-Standard Procedure: No

ERP Call-out Initiated: No

Information

Esso Station<UNOFFICIAL>
Mailing Address: Woodroffe and Knoxdale,, , , Ottawa, Ontario, Canada
Physical Address: Lot: , Part: , Woodroffe and Knoxdale,, Ottawa, City, Ontario, Canada
Telephone: , FAX:
Client Type: , NAICS:

Information

Esso Station<UNOFFICIAL>
Address: Lot: , Part: , Woodroffe and Knoxdale, Ottawa, City,
District Office: Ottawa
GeoReference: Map Datum: , Accuracy Estimate: , UTM Easting: , UTM
Location Description: ,
LIO GeoReference: Zone: , UTM Easting: , UTM Northing: , Latitude: , Longitude:

Incident Summary: Esso Station: diesel pump leaking fuel
cannot be longer than 60 characters
Incident Description: Caller indicates that a complainant called the Ottawa FD to report that the diesel nozzle at the Esso Station repeatedly spills fuel when it is placed back into the pump holder. Caller estimates that approximately 100mL of fuel is spilled each time. Caller states that this has been ongoing for approximately 6 weeks. Caller states there is considerable staining on the pad surrounding the diesel pump.

Attachments & Document Links:
Links & Comments: Please enter text and/or paste document links here:

Attachments: There are no attachments for this document.

Attachments Names:
Attachments Size: 0.00 MB

Date of Incident: Incident Date Confirmation:
Actual
2013/06/26 Time of Incident:

Source Type: Sector Type:

Nearest Watercourse: Watershed Category
Code:
Environmental Impact:
Nature of Impact:

1545 WOODROFFE AVENUE, OTTAWA - 1136452

Incident Event:

Incident Reason:

Damaged Party: No

Contaminants Table

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

Controller of Material: Esso

Owner of Material:

1545 WOODROFFE AVENUE, OTTAWA - 1136452
Esso

Estimated Clean Up Cost: Who Cleaned Up:
% Clean Up: % MOE/Other Agencies Involved:

Voluntary / Mandatory Abatement Items

Type
Parent Ref. No.
Work Summary
Comp. Date
Attained Date

Suspected Violation(s)/Offence(s):
Act - Regulation - Section,
Description
{General Offence}

Provincial Officer:
Name:
Badge No:

Work Unit:
District/Area Office:
Date:

Signature:

District/Area Supervisor:
Name:

Work Unit:
District/Area Office:
Date:

Signature:

General Comments

Date	Time	Updated by	Status Tracking
2013/06/26			
2013/06/26			
2013/06/26			
2013/06/26			
2013/06/26	07:11 PM		
07:14 PM			
07:14 PM			
07:14 PM			
07:15 PM		Scott Steeves	
Scott Steeves			
Scott Steeves			
Scott Steeves			
Scott Steeves			document created
document saved			

task link created
document saved
document forwarded to Spills Action Centre_Spills Action Centre Tasks

Turnaround Time: 0 day(s) Clock Status: On
Reasons for turning clock off:

Owner: Editors:
Spills Action Centre_Spills Action Centre Tasks [Administrator]

TECHNICAL STANDARDS and SAFETY AUTHORITY

14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario M8X 2X4
Toll free 1-877-682-8772
Fax (416) 231-1626
www.tssa.org

FS Inspection Report

Service Request #	**704786**
Inspection Report #	**3652839**

Inspection Address: **1545 WOODROFFE AVE** **NEPEAN;ON** **CA K2G 1W2**	Reference Number(s):	Inspection Completion Date: **DEC 21, 2011**
	Facility Type: **FS Gasoline Station - Self Serve**	Equipment Type:
Customer Name and Address: **6161278 CANADA INC** **1545 WOODROFFE AVE** **NEPEAN;ON** **CA K2G 1W2**	Task Type: FS-LF Pre Lic Insp	
	The facility/equipment is inspected in accordance with Ontario's Technical Standards & Safety Act and the appropriate regulations and codes. When an Inspector's order is issued, time limits for compliance reflect the severity of the violation and serve to avoid disruption of service.	

Task Notes

ON SITE FOR PRE-LICENCE INSPECTION. ALL SUMP SENSORS INSTALLED AS PER CODE ALL SIGNAGE AND FIRE EQUIPMENT UP TO DATE. STAFF TRAINED AND SIGNED OFF. VIDEO CLEAR AND MEETS CODE. SITE IN COMPLIANCE AT THE TIME OF THIS INSPECTION.

FIND ATTACHED YOUR COPY OF THE FUEL SAFETY INSPECTION CONDUCTED ON DECEMBER,21 2011. SHOULD YOU HAVE ANY QUESTIONS, CONTACT DAVID NORMAN AT 613-297-7422. FS INSPECTION REPORT SERVICE REQUEST #, 704786

Standard Notes

Dear Sir/Madam:This document is not transferable to any other facility, vehicle or location.This document is your authorization to immediately begin operation of the facility or tank vehicle at the location noted above. This document must be kept at the location or carried with the licenced vehicle until you receive the formal licence.A permanent licence will be sent to you within four weeks of your payment of the pre-licence inspection fee. It is illegal to operate without a valid temporary or permanent license.THIS IS A TEMPORARY LICENCE AND WILL EXPIRE 90 DAYS FROM DATE OF ISSUE.

Labour Detail

Date	Activity	Hours	Comments
DEC 21, 2011	Inspection	1.5	INSPECT FACILITY FOR PRE-LICENCE PREPARE AND ISSUE REPORT
DEC 21, 2011	Travel	.5	MANDATED TRAVEL

Customer Signature & Position / Date:		**Inspector Name:** Norman, David	**Inspector Contact Number:** 613-284-8284
Report Received By:	**Customer Contact Number:**	**Inspector Email:** DNorman@tssa.org	**Inspector Fax:** 613-284-8296

As a not-for-profit regulatory authority, TSSA operates on a cost recovery basis. An Invoice will be issued for the Total Charges Incurred.
(Note: This is not an invoice)

Putting Public Safety First

Leak - 1545 Woodroffe Avenue, Ottawa_case number 647768

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number: 8523-8KZNNG File Storage Number: SPILLS ACTION CENTRE
Module: Incident Reporting Module Type: Spill
Cross Reference: (doc link) Task Link: 3756-8KZNZE
Originating Document: Created by: Julianne Dominski
Incident Report Reference Number: 8523-8KZNNG

Date Created: 2011/08/23 Date Completed:
Bring Forward Date: Bring Forward Reason:
Status: To be assigned
Program Waste - Hazardous & Liquid industrial Activity: Spills
Is this an air emission (measured or modelled) or wastewater (sewage) discharge exceedance that will become part of the Environmental Compliance Report?

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

To be determined Click here for Guidance

Hide Caller/PO Information for FOI Printing: No

Reported By: Name of Company:

First Name
Last Name
Lorne
Wedge Imperial Oil
Contact Mailing Address
Civic Address: Unit Identifier:

Delivery Designator: Delivery Identifier:

Municipality: Postal Station: Province/State: Postal Code:
Toronto Ontario
Telephone Number: Extension: Other Number: Email Address:
(416)441-7866 Fax

Date Reported to MOE: 2011/08/23 Time Reported to MOE: 13:35

Office Receiving Incident Report: Spills Action Centre
Incident Info Received By: Julianne Dominski

MOE Response: Site Region: Eastern

Date of MOE Arrival at Scene: Time of MOE Arrival at Scene:

Master Incident Report Number:

SAC Action Class: TSSA - Fuel Safety Branch

Leak - 1545 Woodroffe Avenue, Ottawa_case number 647768

Non-Standard Procedure: No

ERP Call-out Initiated: No

Information

Imperial Oil Limited
Mailing Address: 7100 Jean - Talon est, Montreal, Quebec, Canada, H1M 3R8
Physical Address: 2075 Montreal Rd, Ottawa, City, Ontario, Canada, K1J 6M6
Telephone: (450)922-1539, FAX: (450)922-8572
Client #: 4929-72KS6Z, Client Type: Corporation

Information

Woodroffe Ave and Medhurst Site<UNOFFICIAL>
Address: Lot: , Part: , 1545 Woodroffe Ave, Ottawa, City,
District Office: Ottawa
GeoReference: Map Datum: , Accuracy Estimate: , UTM Easting: , UTM
Location Description: ,

Incident Summary: Imperial Oil: gasoline into groudnwater wells, clnd cannot be longer than 60 characters

Incident Description: 13:35 Caller to SAC(jd) reports that during their annual monitoring for historical free product in their groundwater monitoring wells they found 73 mm (1/4 of a litre) of free product (gasoline) in the groundwater. They purged the system and removed the hydrocarbon. The product was found in the groundwater monitoring well that is adjacent to the Pump Island. The caller is completing a Contaminant Management Plan (CMP) but needs some approvals from the City of Ottawa before he can complete the CMP. Caller was just looking to let a local TSSA inspector know of the incident.

13:41 Paged TSSA
13:45 Briefed Peter (TSSA), emailed report

Attachments & Document Links:
Links & Comments: Please enter text and/or paste document links here:

Attachments: There are no attachments for this document.

Attachments Names:
Attachments Size: 0.00 MB

Date of Incident: Actual 2011/06/27

Incident Date Confirmation:

Time of Incident:

Source Type: Other

Sector Type: Miscellaneous Industrial

Leak - 1545 Woodroffe Avenue, Ottawa_case number 647768

Nearest Watercourse:

Watershed Category Code:

Environmental Impact:
Not Anticipated

Nature of Impact: Groundwater Pollution
Incident Cause: Other Discharges Incident Reason: Spill
Damaged Party: No

Contaminants Table

Contaminant Code	UN#	Limit	Quantity	[units]	[freq]
GASOLINE	12	1203	0.25	L	

Controller of Material: Imperial Oil

Owner of Material: Imperial Oil

Estimated Clean Up Cost:

Who Cleaned Up:

% Clean Up: 100 % Agencies Involved:

Voluntary / Mandatory Abatement Items

Type
Parent Ref. No.
Work Summary
Comp. Date
Attained Date

Suspected Violation(s)/Offence(s):
Act - Regulation - Section,
Description
{General Offence}

Provincial Officer:

Name:
Badge No:

Work Unit:
District/Area Office:
Date:

Signature:

District/Area Supervisor:

Name:

Work Unit:
District/Area Office:
Date:

Signature:

General Comments

Date	Time	Updated by	Status Tracking
2011/08/23			
2011/08/23			
2011/08/23			
2011/08/23	01:36 PM		
01:53 PM			
01:54 PM			
01:54 PM		Julianne Dominski	
Julianne Dominski			
Julianne Dominski			
Julianne Dominski			document created
document saved			
task link created			
document saved			

Turnaround Time: 0 day(s) Clock Status: On

Leak - 1545 Woodroffe Avenue, Ottawa_case number 647768
Reasons for turning clock off:

Owner: Editors:
Julianne Dominski [Administrator]

Job 009736005-024 (FS SUB 2009-022)

Job Description: Modification - Proposed tankage and upgrade to the existing facility

Job Type: Design Submittal (FS)
Status: Pending Inspection
Parent Job: 009736005-007 Loc id - 0009
Specific Location:

Date Created: May 01, 2009
Created By: THAMPAPA
Date Completed: mmm dd, yyyy

Details | Processes | Warnings | Client | App/Equip | Facility/Location | [redacted] | Invoices

Facility Type: Gasoline Station - Self Serve
Bill To: FSD: IMPERIAL OIL
90 WYNFORD DR, TORONTO, ON, CA
M3C 1K5 - P0134587

Hazard Rank: 1 - Low
Total Waiting Time: 1

Date Received by FSD: May 1, 2009
Rush:
Reviewed by P.Eng.:
Date of P.Eng. Letter: mmm dd, yyyy
Engineer:
Engineer Contact: (None)

Comments:

TECHNICAL STANDARDS & SAFETY AUTHORITY
14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario
Canada M8X 2X4

Fuels Safety Division

May 4, 2009
License No.: 0076593938-C
(Please quote in your correspondence)

1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS
1545 WOODROFFE AVE
NEPEAN, ON
CA K2G 1W2

Dear Mr. Scott Wetton:

Re: Application for a Modification to a Gasoline Station - Self Serve at 1545 Woodroffe Av, Nepean.

We have received your application, dated April 30, 2009, for a modification to a Gasoline Station - Self Serve at the above location and the corresponding site plans. A copy of the approved drawing(s) is enclosed.

The site will be inspected by our inspector, David Norman. In order to schedule the inspection, please call our Inspector at (613) 284-8284 at least 10 days before the facility is to be commissined.

Please ensure that the Electrical Safety Authority Certification of Inspection (if applicable) is presented to our Inspector during the visit.

The facility shall not be operated prior to our Inspection unless the facility is Inspected and accepted by a contractor who declares in writing that the facility complies with the requirements of O. Reg 217/01.

Yours truly,

Lisa Howey, P. Eng.
Fuels Safety Program
Tel. No.: (416) 734-3542
Fax No.: (416) 231-7525
lhowey@tssa.org

Imperial Oil

Imperial Oil Limited
90 Wynford Drive
Toronto ON, M3C 1K5

Scott Wetton
Project Manager
Asset Management

Tel: (416) 441-7841
Fax: (416) 441-7650
Cell: (416) 937-2340

Imperial Oil

Scott Wetton
Construction Project Manager
Fuels Marketing - Asset Management

Imperial Oil
Products and Chemicals Division
90 Wynford Drive, Room 5075
Toronto, Ontario, Canada M3C 1K5
Tel. (416) 441-7841
Fax (416) 441-7650
Cell. (416) 937-2340
scott.f.welton@esso.ca

April 30, 2009

Andrea Krishnapillai
Fuels Safety Licencing Agent
Technical Standards & Safety Authority
14th floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario **M8X 2X4**

Ref: **Proposed Tankage & Upgrade @ Esso Gas Bar # 88001626, located at 1545 Woodroffe Ave, Nepean, Ontario**

See enclosed the Site License Application, and three (3) copies of the proposed site drawings and piping plan for the above location. Imperial Oil plans to start construction **May 11, 2009.** Please process this application for modification in **RUSH status.** The site is an existing gas bar and will be closed for approximately 2 months to complete the repairs. We will be installing new double-walled fiberglass tanks, double walled OPW flexible piping with containment sumps. We will also be upgrading our Veeder-root monitoring system and our CCTV surveillance system on site.

Please review and advise of any issues or concerns.

Note: please advise yours truly, Scott Wetton (416) 441-7841 when approval of engineering plans has been issued so I can pick-up at your offices.

Please do not hesitate to call me should you have any questions or concerns.

Regards,

Scott Wetton
Project Manager, Imperial Oil Limited

TECHNICAL STANDARDS & SAFETY AUTHORITY
RECEIVED
MAY 01 2009
LRC - AK

Copy: File

orm Periodic Inspection (FS) for Job 009736005-017 (FS PIN 2004-00802)

tion: EXTENDED TILL JULY 15 07

Assignments

Complete by NORMAND

d To: David Norman

e: Inspection Complete

Schedule

Scheduled Start: May 12, 2007

Scheduled Complete: mmm dd, yyyy

Actual Start: mmm dd, yyyy hh:mm

Actual Complete: Jan 31, 2008 14:08

Reports

ails | Deficiencies | Time | Documents | Comments | O/S Orders | tesolved/Orders | Create Def

w Resolved?

cription	Found By	Date	Resolved By	Date
ndant can't see all dispensers	Perform Periodic Inspection	Mar 22, 2007	This Process	Jan 31, 2008

TECHNICAL STANDARDS and SAFETY AUTHORITY

www.tssa.org

14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario M8X 2X4
Ph - (416) 734-3300, Fax - (416) 231-1626
Toll - 1-877-682-8772

Fuel Safety Inspection Report

1 *Report Number:* **FS-2007-0004995**

2 *File Number:* **FS PIN 2004-00802**

Technical Standards and Safety Act, 2000

3 *Location Address*	4 *License/Serial Number*	5 *Job Type*	6 *Inspection Date*
1545 WOODROFFE AV NEPEAN, ON K2G 1W2 CANADA	**0076593938-C**	**Periodic Inspection (FS)**	**Jan 31, 2008**
	7 *Facility Type*	**Gasoline Station - Self Serve**	

8 *Client*	
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS 1545 WOODROFFE AVE NEPEAN, ON K2G 1W2 CA	**The Facility/Equipment is inspected in accordance with Ontario's Technical Standards & Safety Act and the appropriate regulations and codes. When an Inspector's order is issued, time limits for compliance reflect the severity of the violation and serve to avoid disruption of service. In the interim period the recipient must ensure that additional precautions are taken for safe use.**

INSPECTION NOTE: ON SITE TO INSPECT FACILITY CAMERAS NEED TO SHOW EACH PUMP TO MEET COMPLIANCE .

Inspection Activity - Time Allocation Detail

Date	Activity	Hours	Rate	Comments
Jan 31, 2008	Administration	0.50	Straight	
Jan 31, 2008	Inspection	1.00	Straight	
Jan 31, 2008	Travel	0.50	Straight	

13 *Total Time*	14 *Travel Time*	15 *Billable Hours*	16 *Additional Charges*
2	**0.5**	**0**	

Voluntary Compliance Option* - Eligible? ☐ Yes ☒ No *Please, refer to guidelines

I hereby confirm that all the Inspector's orders, appearing on this inspection report have been completed.

Print Name _____ *Client Signature* _____

David Norman — *Inspector*

(613) 284-8296 — *Inspector Fax Number*

As a not-for-profit regulatory authority, TSSA operates on a cost recovery basis. An invoice will be issued for this activity.

Putting Public Safety First

(Note: This is not an invoice)

orm Periodic Inspection (FS) for Job 009736005-017 (FS PIN 2004-00802)

ion: NC MAY 12

Assignments

Complete by NORMAND

d To: David Norman

e: Minor Deficiencies - Must Reinspect

Schedule

Scheduled Start: Feb 24, 2007

Scheduled Complete: mmm dd, yyyy

Actual Start: mmm dd, yyyy hh:mm

Actual Complete: Mar 22, 2007 15:25

Reports

ails | Deficiencies | Time | Documents | Comments | O/S Orders | tesolved/Orders | Create Def

w Resolved?

cription	Found By	Date	Resolved By	Date
ndant can't see all dispensers	This Process	Mar 22, 2007	Perform Periodic Inspection	Jan 31, 2008

TECHNICAL STANDARDS and SAFETY AUTHORITY
www.tssa.org
14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario M8X 2X4
Ph - (416) 734-3300, Fax - (416) 231-1626
Toll - 1-877-682-8772

Fuel Safety Inspection Report

Technical Standards and Safety Act, 2000

1 *Report Number:* FS-2004-0003382
2 *File Number:* FS PIN 2004-00802

3 *Location Address*	4 *License/Serial Number*	5 *Job Type*	6 *Inspection Date*
1545 WOODROFFE AV NEPEAN, ON K2G 1W2 CANADA	0076593938-C	Periodic Inspection (FS)	Mar 22, 2007
	7 *Facility Type*	Gasoline Station - Self Serve	

8 *Client*
1070443 ONTARIO INC O/A WOODROFFE TIGER EXPRESS
1545 WOODROFFE AVE
NEPEAN, ON K2G 1W2
CA

The Facility/Equipment is inspected in accordance with Ontario's Technical Standards & Safety Act and the appropriate regulations and codes. When an Inspector's order is issued, time limits for compliance reflect the severity of the violation and serve to avoid disruption of service. In the interim period the recipient must ensure that additional precautions are taken for safe use.

9 Order No.	10 Code Section	11 Order Issued To	12 Compliance Date
1	LFHC 5.1.2.(b)	Attendant can't see all dispensers - Control equipment for self-serve dispensers shall be b. located such that the self-serve attendant has an unobstructed view from the console of all dispensing operations, **JAN 2007 REQUIREMENTS NOT MET SEE FORM ATTACHED**	Apr 21, 2007

INSPECTION NOTE: ON SITE TO INSPECT FACILITY INSPECTORS INSTRUCTIONS ISSUED NOTE I HAVE TO CHECK EQUIPMENT DETAILS NOT CORRECT?

13 *Total Time*	14 *Travel Time*	15 *Billable Hours*	16 *Additional Charges*
2	0.5	0	

Voluntary Compliance Option* - Eligible? ☐ Yes ☒ No *Please, refer to guidelines

I hereby confirm that all the Inspector's orders, appearing on this inspection report have been completed.

Print Name _____ *Client Signature* _____

David Norman — *Inspector*
(613) 284-8296 — *Inspector Fax Number*

As a not-for-profit regulatory authority, TSSA operates on a cost recovery basis. An invoice will be issued for this activity.

Putting Public Safety First

(Note: This is not an invoice)

orm Periodic Inspection (FS) for Job 009736005-013 (FS PIN 2002-06486)

tion: INSPECTION COMPLEATED INSTRUCTIONS ISSUED

Assignments

Complete by NORMAND

d To: David Norman

e: Minor Deficiencies -Voluntary Compliance

Schedule

Scheduled Start: Mar 12, 2004

Scheduled Complete: mmm dd, yyyy

Actual Start: mmm dd, yyyy hh:mm

Actual Complete: Feb 23, 2004 12:21

Reports

ails | Deficiencies | Time | Documents | Comments | O/S Orders | tesolved/Orders | Create Def

w Resolved?

cription	Found By	Date	Resolved By	Date
secutive/unexplained loss	This Process	Feb 23, 2004	Record Voluntary Compliand	Mar 18, 2004
ord of leak detection test missi	This Process	Feb 23, 2004	Record Voluntary Compliand	Mar 18, 2004

TECHNICAL STANDARDS and SAFETY AUTHORITY

www.tssa.org

4th Floor, West Tower
3300 Bloor Street West
Toronto, Ontario M8X 2X4
(416) 325 - 2943

Fuel Safety Inspection Report

1 *Report Number:* **FS-2002-0006486**

2 *File Number:* **FS PIN 2002-06486**

Technical Standards and Safety Act, 2000

3 *Location Address*	4 *License/Serial Number*	5 *Job Type*	6 *Inspection Date*
1545 WOODROFFE AV NEPEAN, ON K2G 1W2 CANADA	**0076593938-C**	**Periodic Inspection (FS)**	**Feb 23, 2004**
	7 *Facility Type*	**Gasoline Station - Self Serve**	

8 *Client*
1070443 ONTARIO INC
1545 WOODROFFE AVE
NEPEAN, ON K2G 1W2
CA

The Facility/Equipment is inspected in accordance with Ontario's Technical Standards & Safety Act and the appropriate regulations and codes. When an inspector's order is issued, time limits for compliance reflect the severity of the violation and serve to avoid disruption of service. In the interim period the recipient must ensure that additional precautions are taken for safe use.

9 Order No.	10 Code Section	11 Order Issued To	12 Compliance Date
1	LFHC 4.6.6.	Record of leak detection test missing/test failed - The equipment required by section 4.6.3 shall be maintained and tested at least annually in accordance with the manufacturer's instructions and a written record of the maintenance and testing shall be retained.	Mar 15, 2004
2	LFHC C.1.3.	Consecutive/unexplained losses - Where the reconciliation required by section C.1(a)(iii) shows an unexplained loss of product for 5 consecutive days or an abnormal variance for any single day greater than the lesser of 0.5% of the monthly tank throughput or 0.5% of the tank volume the operator shall a) immediately commence an investigation into the cause of the loss of product, and b) if a leak is confirmed, comply with the requirements of Section 7.2 **VARIANCE GROWING SLOWLY**	Mar 15, 2004

INSPECTION NOTE: BECAUSE OF THE GROWING VARIANCE LOSS YOU ARE ORDERED TO DO A PERCISION PRESSURE TEST TO BE PREFORMED BY TANK TECKNOLOGY.

* Note: This report is eligible for the Voluntary Compliance option. Should you choose to exercise it, please adhere to the following procedure:

1. All inspectors orders appearing on the inspection report must be complied with.
2. The recipient must complete the Voluntary Compliance Option box. After complying with the above conditions, this inspection report must be returned directly to TSSA head office via fax or mail, by the last compliance date appearing on the Inspection report.
3. Should TSSA fail to receive the Voluntary Compliance Form by the compliance date, an inspector will re-inspect and bill at double our normal rate.

For more information please contact TSSA at the number above or toll-free at 1-877-682-8772.
It is an offence to knowingly make a false statement or to furnish false information under the Act, the Regulations or a Ministers order. (Technical Standards and Safety Act, 2000; Sect 37)

13 *Total Time*	14 *Travel Time*	15 *Billable Hours*	16 *Additional Charges*
2.5	**0.5**	**2.5**	

Voluntary Compliance Option* - Eligible? [X] Yes [ ] No *Please, refer to guidelines

I hereby confirm that all the inspector's orders, appearing on this inspection report have been completed.

Print Name _____ *Client Signature* _____

David Norman
Inspector

As a not-for-profit regulatory authority, TSSA operates on a cost recovery basis. An invoice will be issued for this activity.

Putting Public Safety First

(Note: This is not an invoice)

Perform Pre-License/Modification Inspection (FS) for Job 009736005-007 (0076593938-C)

Description: E039350 Gasoline Statio Pre-license

Assignments

Status: Complete by NORMAND

Assigned To: David Norman

Outcome: Inspection Complete & Issue Temp License

Schedule

Scheduled Start: mmm dd, yyyy

Scheduled Complete: mmm dd, yyyy

Actual Start: Mar 12, 2001 00:00

Actual Complete: Mar 12, 2001 00:00

Reports

Details | Deficiencies | Facility/Location | Time | Documents | Comments | O/S Orders | Resolved/Orders

Note Type	Last Updated By	On	Locked	Note
FS Deficiency Outstanding	David Norman	Mar 12, 2001 00:00:00	☐	GASOLINE HANDLING ACT, RSO 1990, C G.4 Section# 8(67)
FS Deficiency Outstanding	David Norman	Mar 12, 2001 00:00:00	☐	GASOLINE HANDLING ACT, RSO 1990, C G.4 Section# 5(34)

TR 2001-420

Technical Standards and Safety Authority

Inspector's Report - Part A

Issued under Ontario's **Energy Act** and/or **Gasoline Handling Act**

Report No. E-039350

PLEASE PRINT

Location Inspected	Owner's Name
ESSO (1070413 ONTARIO INC	
Address: 1545 WOODROFFE AV	Address:
City/town: NEPEAN	City/town:
Postal Code: K2G 1W2 Tel. No.: 613 2266456	Postal Code: Tel. No.:
Operator's Name: JACKIE BROOKS	Fuel Supplier: City:
Licence No.: 3076593938	

Contractor	Registration No.

OPERATION/SUB	LOC TYPE	POP DEN	FUEL	CLASS	REASON	TRIGGER	ACTION
11	02	01	GAS	03	22	01	01

ACT	REG	DURATION	TRAVEL	BILLABLE	BILL	OCC RATE	CAUSE
GHA	521/93	1.75	.25	1.5	(1) 2 3	02	

CON FACT	OCC DATE	OCC TIME	FIELD 1	SITE REM	COMPLETED?	
				☐ Yes ☐ No	0005657	☑ Yes ☐ No

Investigation/Audit/Occurrence Summary

ON SITE TO INSPECT FOR PRELICENCE.

INSPECTORS INSTRUCTIONS ISSUED

PRE LICENCE ISSUED

Equipment/Appliance/Component

Type	
Description	
Manufacturer	
Model	Serial No.
Material	
Fuel Input Rating	
Date of Manufacture	
Installation Date	
Supply Pressure	Manifold Pressure

APR 04 2001

Equipment/Appliance/Component

Type	
Description	
Manufacturer	
Model	Serial No.
Material	
Fuel Input Rating	
Date of Manufacture	
Installation Date	
Supply Pressure	Manifold Pressure

TECHNICAL STANDARDS & SAFETY AUTHORITY RECEIVED MAR 28 2001 FUELS SAFETY CORPORATE SERVICES DIVISION

As a not-for-profit regulatory authority, the Technical Standards and Safety Authority operates on a cost recovery basis. An invoice will be issued for this activity.

Client's Signature	Inspector's Name	Badge #	Date of Inspection
		254	2001 03 12

FS 09181 (12/99)

Les demandes d'une version française du présent document seront prises en considération.

Head Office

Technical Standards and Safety Authority

Inspector's Instructions/Orders Part B

00874073

Report No. E039350

Date: 2001 03 12 (Y M D)

Issued under Ontario's **Energy Act** and **Gasoline Handling Act**

Location Address (No RR's)	Position
ESSO (1070443 ONTARIO INC) 1545 WOODROFFE AVE NEPEAN K2G-1W2	OPERATOR
Issued To	
JACKIE BROOKS	
Mailing Address	
ESSO (1070443 ONTARIO INC) 1545 WOODROFFE AVE NEPEAN K2G-1W2	
Your attention is requested pursuant to: Act: GHA	Regulation: 521/93

Licence #	Expiry	Registration #	Expiry	Certificate #	Expiry
0076593938	2002 03 12				

Order #	Section	You are hereby instructed to correct the following infraction(s)	Compliance Date
1	5(34)	**Pursuant to the gasoline handling code 521 [93] The corrosion protection system for an underground storage tank system shall be tested and certified in writing to the owner to be in working order by a person certified by NACE or an engineer at intervals not exceeding 2 years and the record of testing and certification shall be retained by the owner.** HR2	APRIL 30 2001
2	8(67)	CONTROL EQUIPMENT FOR SELF-SERVE DISPENSERS SHALL BE OF THE CONSOLE TYPE AND SHALL BE	APRIL 30
	8(67)(c)	LOCATED THAT THE SELF-SERVE ATTENDANT HAS AN UNOBSTRUCTED VIEW FROM THE CONSOLE OF ALL DISPENSERS HR2	2001

Received By: (print) JACKIE BROOKS	Inspector: (print) DAVE NORMAN
Position: OPERATOR	Signature:
Signature:	Inspector's Badge #: 254

FS-09221(09/98)

Head Office

Perform Pre-License/Modification Inspection (FS) for Job 009736005-006 (0076557412-P)

Description: E006790 Gasoline Statio Pre-license

Assignments

Status: Complete by STRATUIJ

Assigned To: John Stratuik

Outcome: Inspection Complete & Issue Temp License

Schedule

Scheduled Start: mmm dd, yyyy

Scheduled Complete: mmm dd, yyyy

Actual Start: Sep 21, 1999 00:00

Actual Complete: Sep 21, 1999 00:00

Reports

Details | Deficiencies | Facility/Location | Time | Documents | Comments | O/S Orders | Resolved/Orders

Inspection Report Number: E006790

Verify Information:

Orders Issued To:

Date of Inspection: Sep 21, 1999 Re-Inspection Date: mmm dd, yyyy

Have you entered your tim: Yes No

Inspection Display Address: 1545 WOODROFFE AV, NEPEAN, ON, CA K2G 1W2

TR-99-4998

Technical Standards and Safety Authority

Inspector's Report / Rapport de l'inspecteur(trice) Part A/Partie A

Issued under Ontario's Energy Act and/or Gasoline Handling Act
Délivré en vertu de Loi sur les hydrocarbures ou de la Loi sur la manutention de l'essence de l'Ontario

Report No / N° de rapport: E- 006790

Location Inspected / Lieu inspecté
1070554 Ontario Inc- o/a Woodroffe Esso
Address / Adresse: 1545 Woodroffe Ave
City/town / Ville: Nepean Ont.
Postal Code / Code postal: K2G-1W2 Tel. No. / N° de tél.: 613-226-6456
Operator's Name / Nom de la personne responsable: Peter Vaughn
Licence No / N° de permis: 007655744 2

Owner's Name / Nom du/de la propriétaire
Address / Adresse
City/town / Ville
Postal Code / Code postal Tel. No. / N° de tél.
Fuel Supplier / Fournisseur de combustible City / Ville
Imperial Oil Limited (Esso)

Contractor / Entrepreneur
Registration # / N° d'inscription

OPERATION/ACTIVITÉ	SUB TYPE/SOUS TYPE	LOC TYPE/ TYPE DE LIEU	POP DENS/ DENS. DE POP.	FUEL/COMBUSTIBLE	CLASS/CATÉGORIE	REASON/RAISON	TRIGGER/ MOTIVÉ PAR :
11	—	02	01	Gasoline	01	22	01

ACTION / MESURES PRISES	ACT/LOI	REG/RÈGLEMENT	DURATION/DURÉE	BILLABLE/ À FACTURER	TRAVEL/VOYAGE	BILL FACTURER Y/N O/N	
	C.H.A	521/93	2	Y	Y	Y	

DAMAGE /DOMMAGES	OCC RATE/ GRAV. DE L'ACC.	CAUSE/CAUSE	CON FACT/ FACT. CONTR.	OCC DATE/ DATE DE L'ACC.	OCC TIME/ HEURE DE L'ACC.	MANDATED Y/N MANDAT O/N	
						Y	

FIELD 1/DOMAINE 1	CALL/INTERVENTION	CONSULT Y/N CONSULT. O/N	SITE REM Y/N REMÉDIER O/N				COMPLETED? Y/N TERMINÉE? O/N
	01						Y

Comments/Commentaires
On Site To inspect Fuel Facility & Issue Temporary Licence.
Conformed To The C.H.A At Time of Inspection.

Equipment/Appliance/Component / Matériel/Appareil/Composant

Type/Type Code/Code
Description/Description
Manufacturer/Fabricant
Model/Modèle Serial No/ N° de serie
Material/Matériel
Corrosion Protection/Protection contre la corrosion
Fuel Input Rating/Débit de combustible
Capacity/Capacité
Installation Date/Date d'installation
Manufacture Date/Date de fabrication
Supply Pressure/ Pression d'alimentation
Manifold Pressure/ Pression d'admission

OCT 07 1999

Equipment/Appliance/Component / Matériel/Appareil/Composant

Type/Type Code/Code
Description/Description
Manufacturer/Fabricant
Model/Modèle Serial No/ N° de serie
Material/Matériel
Corrosion Protection/Protection contre la corrosion
Fuel Input Rating/Débit de combustible
Capacity/Capacité
Installation Date/Date d'installation
Manufacture Date/Date de fabrication
Supply Pressure/ Pression d'alimentation
Manifold Pressure/ Pression d'admission

TECHNICAL STANDARDS & SAFETY AUTHORITY RECEIVED OCT 01 1999 FUELS SAFETY CORPORATE SERVICES DIVISION

Client's Signature/Signature du client/de la cliente
Inspector's Name/Nom de l'inspecteur(trice)
Badge No / N° d'insigne: 192
Date of Inspection/ Date d'inspection: Y/A 99 M/M 09 D/J 21

FS 09181 (05/97)

Perform Pre-License/Modification Inspection (FS) for Job 009736005-005 (0076505106-P)

Description: E000910 Gasoline Statio Pre-license

Assignments

Status: Complete by SCARLANM

Assigned To: Mike Scarland

Outcome: Inspection Complete & Issue Temp License

Schedule

Scheduled Start: mmm dd, yyyy

Scheduled Complete: mmm dd, yyyy

Actual Start: Sep 10, 1997 00:00

Actual Complete: Sep 10, 1997 00:00

Reports

Details | Deficiencies | Facility/Location | Time | Documents | Comments | O/S Orders | Resolved/Orders

Inspection Report Number: E000910

Verify Information:

Orders Issued To:

Date of Inspection: Sep 10, 1997 Re-Inspection Date: mmm dd, yyyy

Have you entered your tim: Yes No

Inspection Display Address: 1545 WOODROFFE AV, NEPEAN, ON, CA K2G 1W2

Technical Standards and Safety Authority

Inspector's Report / Rapport de l'inspecteur(trice) Part A/Partie A

Issued under Ontario's Energy Act and/or Gasoline Handling Act
Délivré en vertu de Loi sur les hydrocarbures ou de la Loi sur la manutention de l'essence de l'Ontario

Report No / N° de rapport: E- 000910

Location Inspected / Lieu inspecté	Owner's Name / Nom du/de la propriétaire
ESSO	1017892 ONT LTD
Address / Adresse: 1545 WOODROFFE AVE	Address / Adresse: OCT 2 6 1997 SAME
City/town / Ville: NEPEAN	City/town / Ville
Postal Code / Code postal: K2G 1W2 Tel. No. / N° de tél.: 613-226-6456	Postal Code / Code postal Tel. No. / N° de tél.
Operator's Name / Nom de la personne responsable: BRIAN SMITH	Fuel Supplier / Fournisseur de combustible: ESSO City / Ville: OTTAWA
Licence No / N° de permis: PENDING	

Contractor / Entrepreneur | Registration # / N° d'inscription: 807650506

OPERATION/ACTIVITÉ	SUB TYPE/SOUS TYPE	LOC TYPE/ TYPE DE LIEU	POP DENS/ DENS. DE POP.	FUEL/COMBUSTIBLE	CLASS/CATÉGORIE	REASON/RAISON	TRIGGER/ MOTIVÉ PAR :
11		02	03	GAS / DIES	01	22	01

ACTION / MESURES PRISES	ACT/LOI	REG/RÈGLEMENT	DURATION/DURÉE	BILLABLE/ À FACTURER	TRAVEL/VOYAGE	BILL FACTURER Y/N O/N	
	G.H.	521/93	2.0	1.0	1.0	Y2	

DAMAGE /DOMMAGES	OCC RATE/ GRAV. DE L'ACC.	CAUSE/CAUSE	CON FACT/ FACT. CONTR.	OCC DATE/ DATE DE L'ACC.	OCC TIME/ HEURE DE L'ACC.	MANDATED Y/N MANDAT O/N	

FIELD 1/DOMAINE 1	CALL/INTERVENTION	CONSULT Y/N CONSULT. O/N	SITE REM Y/N REMÉDIER O/N				COMPLETED? Y/N TERMINÉE? O/N
	01	N	N				Y

Comments/Commentaires

RECEIVED CHEQUE #5 FOR G.H. LICENCE
SITE OK AT THIS TIME
PRE-LICENCE ALREADY ISSUED

RECEIVED
OCT 27 1997
FUELS SAFETY
CORPORATE SERVICES DIVISION

Equipment/Appliance/Component / Matériel/Appareil/Composant

Type/Type	Code/Code
Description/Description	
Manufacturer/Fabricant	
Model/Modèle	Serial No/ N° de serie
Material/Matériel	
Corrosion Protection/Protection contre la corrosion	
Fuel Input Rating/Débit de combustible	
Capacity/Capacité	
Installation Date/Date d'installation	
Manufacture Date/Date de fabrication	
Supply Pressure/ Pression d'alimentation	Manifold Pressure/ Pression d'admission

Equipment/Appliance/Component / Matériel/Appareil/Composant

Type/Type	Code/Code
Description/Description	
Manufacturer/Fabricant	
Model/Modèle	Serial No/ N° de serie
Material/Matériel	
Corrosion Protection/Protection contre la corrosion	
Fuel Input Rating/Débit de combustible	
Capacity/Capacité	
Installation Date/Date d'installation	
Manufacture Date/Date de fabrication	
Supply Pressure/ Pression d'alimentation	Manifold Pressure/ Pression d'admission

Client's Signature/Signature du client/de la cliente	Inspector's Name/Nom de l'inspecteur(trice)	Badge No / N° d'insigne: 151
		Date of Inspection/ Date d'inspection Y/A M/M D/J: 97 09 10

FS 09181 (05/97)

Head Office

Perform Pre-License/Modification Inspection (FS) for Job 009736005-004 (0076493220-P)

Description: E000836 Gasoline Statio Pre-license

Assignments

Status: Complete by EMPLOYEF

Assigned To: CONV

Outcome: Inspection Complete & Issue Temp License

Schedule

Scheduled Start: mmm dd, yyyy

Scheduled Complete: mmm dd, yyyy

Actual Start: Jul 16, 1997 00:00

Actual Complete: Jul 16, 1997 00:00

Reports

Details | Deficiencies | Facility/Location | Time | Documents | Comments | O/S Orders | Resolved/Orders

Inspection Report Number: E000836

Verify Information:

Orders Issued To:

Date of Inspection: Jul 16, 1997 Re-Inspection Date: mmm dd, yyyy

Have you entered your tim: Yes No

Inspection Display Address: 1545 WOODROFFE AV, NEPEAN, ON, CA K2G 1W2

Technical Standards and Safety Authority

Inspector's Report / Rapport de l'inspecteur(trice) Part A/Partie A

Issued under Ontario's Energy Act and/or Gasoline Handling Act
Délivré en vertu de Loi sur les hydrocarbures ou de la Loi sur la manutention de l'essence de l'Ontario

Report No / N° de rapport: E- 000836

JUL 31 1997
DATA ENTERED

Location Inspected / Lieu inspecté	Owner's Name / Nom du/de la propriétaire
ESSO	O/A WOODROFFE TIGER EXPRESS 1202422 ONT INC
Address / Adresse: 1545 WOODROFFE AVE	Address / Adresse: SAME
City/town / Ville: NEPEAN	City/town / Ville:
Postal Code / Code postal: K2G 1W2 Tel. No. / N° de tél.: 613-226-6456	Postal Code / Code postal: Tel. No. / N° de tél.
Operator's Name / Nom de la personne responsable: ARTHUR K. RYE	Fuel Supplier / Fournisseur de combustible: ESSO City / Ville: OTTAWA
Licence No / N° de permis: 00 7649 3220	

Contractor / Entrepreneur — Registration # / N° d'inscription

OPERATION/ACTIVITÉ	SUB TYPE/SOUS TYPE	LOC TYPE/ TYPE DE LIEU	POP DENS/ DENS. DE POP.	FUEL/COMBUSTIBLE	CLASS/CATÉGORIE	REASON/RAISON	TRIGGER/ MOTIVÉ PAR:
11		07	03	GASOLINE	01	22	01

ACTION / MESURES PRISES	ACT/LOI	REG/RÈGLEMENT	DURATION/DURÉE	BILLABLE/ À FACTURER	TRAVEL/VOYAGE	BILL FACTURER Y/N O/N	
	G. H	452/93	2.0	1.0	1.0	Y	

DAMAGE /DOMMAGES	OCC RATE/ GRAV. DE L'ACC.	CAUSE/CAUSE	CON FACT/ FACT. CONTR.	OCC DATE/ DATE DE L'ACC.	OCC TIME/ HEURE DE L'ACC.	MANDATED Y/N MANDAT O/N	
						Y	

FIELD 1/DOMAINE 1	CALL/INTERVENTION	CONSULT Y/N CONSULT. O/N	SITE REM Y/N REMÉDIER O/N				COMPLETED? Y/N TERMINÉE? O/N
	01	N	N				Y

Comments/Commentaires

SITE OK AT THIS TIME

Equipment/Appliance/Component / Matériel/Appareil/Composant

Type/Type	Code/Code
Description/Description	
Manufacturer/Fabricant	
Model/Modèle	Serial No/ N° de serie
Material/Matériel	
Corrosion Protection/Protection contre la corrosion	
Fuel Input Rating/Débit de combustible	
Capacity/Capacité	
Installation Date/Date d'installation	
Manufacture Date/Date de fabrication	
Supply Pressure/ Pression d'alimentation	Manifold Pressure/ Pression d'admission

Equipment/Appliance/Component / Matériel/Appareil/Composant

Type/Type	Code/Code
Description/Description	
Manufacturer/Fabricant	
Model/Modèle	Serial No/ N° de serie
Material/Matériel	
Corrosion Protection/Protection contre la corrosion	
Fuel Input Rating/Débit de combustible	
Capacity/Capacité	
Installation Date/Date d'installation	
Manufacture Date/Date de fabrication	
Supply Pressure/ Pression d'alimentation	Manifold Pressure/ Pression d'admission

TECHNICAL STANDARDS & SAFETY AUTHORITY
RECEIVED
JUL 29 1997
FUELS SAFETY
CORPORATE SERVICES DIVISION

Client's Signature/Signature du client/de la cliente	Inspector's Name/Nom de l'inspecteur(trice)	Badge No / N° d'insigne	Date of inspection / Date d'inspection Y/A M/M D/J
A. K. Rye	LES 1715/14	151	97 07 16

FS 09181 (05/97)

ORACLE **Installed Base**

Navigator Favorites Home Profile Sign Out Help

Item Instances

- **General**
- Additional Attributes
- Assets
- Party Relationships
  - Owner
  - Parties
  - Accounts
  - Contacts
  - Summary
- Pricing
- Counters
- Contracts
- Notes
- Transactions
- Service Requests
- Repair Orders
- History
- Operating Units
- Configuration

Quick Find [Item Instance] [ ] Go Advanced Search

Logged In As SQUIBELL

Item Instance Details

Item Instance: 29883698
Item: FS CYLINDER EXCHANGE
Item Description: FS Cylinder Exchange

General Attributes

Organization Name TSSA Item Master
Instance Name
Last Version Label 1
Version Label Date 06-MAY-2004 11:03
Revision
New Version Label
System [ ] Go
External Reference
Item Instance Type
Accounting Classification [Customer Product]
Operational Status Not Used
Lot Number : not lot-controlled
Status Active
Condition
Quantity 1
UOM Each
Start Date 06-MAY-2004
Start Time 11:03
Shipped On Date
Shipped On Time
End Date
End Time
Return By Date
Return By Time
Actual Return Date
Actual Return Time

* Indicates required field.
Time format is HH24:MM
Note: You do not have permission to make updates in this page.

☑ Creation Completed

Owner

Party Type Party
Party Name: 6161278 CANADA INC
Party Number: 874650
Account Number: 391152
Account Name 6161278 CANADA INC

Current Location

* Type [Party Site] Go
Party Name [6161278 CANADA I] Go
Party Number [874650] Go
*Line 1 [1545 WOODROFFE] Go
Site Number [733397] Go
Address 1545 WOODROFFE AVE
NEPEAN, K2G 1W2, CA

Installed At

Installed Date 06-MAY-2004
Installed Time 11:03
Time format is HH24:MM
Change in installed date does not change contract date.
Type [ ] Go

Order

Sales Order Number
Sales Order Date
Sales Order Line

Purchase Order Number

Agreement Name

Item Flags

- [x] BOM Enabled
- [x] IB Trackable
- [ ] Inventory Trackable
- [x] Sellable
- [ ] Shippable

Item Views

- [ ] Merchant
- [x] Customer

Descriptive Flexfields

Context Value: FS Facility

Select Context Value and click 'Go' to show relevant fields.

Facility Type 2

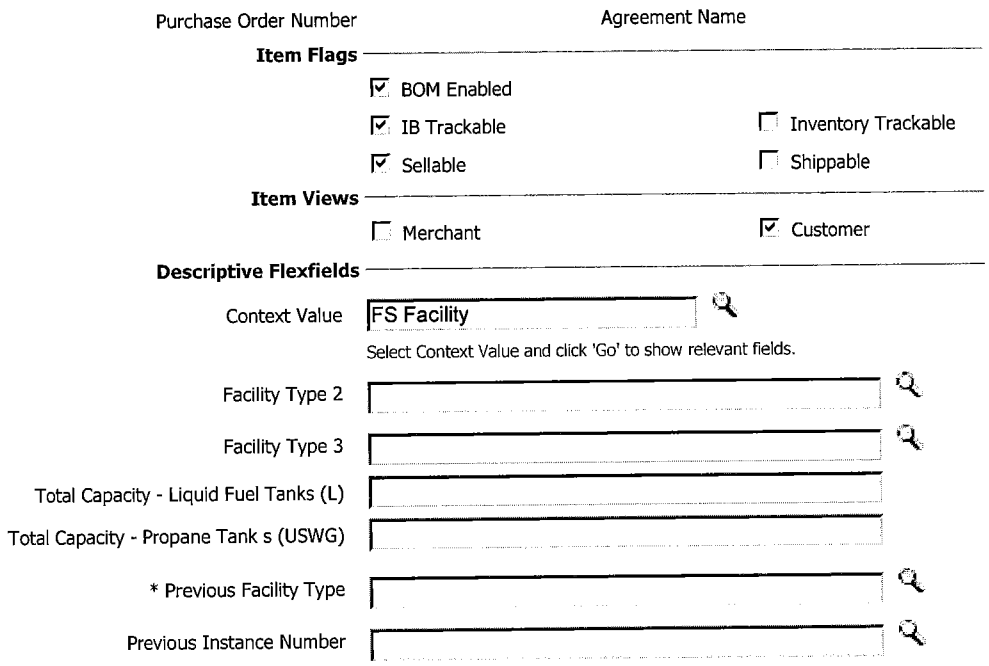
Facility Type 3

Total Capacity - Liquid Fuel Tanks (L)

Total Capacity - Propane Tank s (USWG)

* Previous Facility Type

Previous Instance Number



Item Instances Home Profile Sign Out Help

Copyright 2006, Oracle Corporation. All rights reserved.

Installed Base

Item Instances

General
Additional Attributes
Assets
Party Relationships

Owner
Parties
Accounts
Contacts
Summary
Pricing
Counters
Contracts
Notes
Transactions
Service Requests
Repair Orders
History
Operating Units
Configuration

Contracts

Item Instance: 29883698
Item: FS CYLINDER EXCHANGE
Item Description: FS Cylinder Exchange

Contract Number	Coverage Name	Coverage Description	Service Name	Service Description	Warranty	Modifier Number	Status	Start Date	End Date	Termination Date
000076639758	Fuels Safety Licence-Facility-Propane	Fuels Safety Licence-Facility-Propane	FS CYLINDER EXCHANGE LICENCE	Fuels Safety Licence - Cylinder Exchange	N	7	Expired	07-MAY-2009	06-MAY-2010	
000076639758	Fuels Safety Licence-Facility-Propane Cylinder	Fuels Safety Licence-Facility-Propane Cylinder	FS CYLINDER EXCHANGE LICENCE	Fuels Safety Licence - Cylinder Exchange	N	07-MAR-10 17:37:31	Expired	07-MAY-2010	06-MAY-2011	
000076639758	Fuels Safety Licence-Facility-Propane Cylinder	Fuels Safety Licence-Facility-Propane Cylinder	FS CYLINDER EXCHANGE LICENCE	Fuels Safety Licence - Cylinder Exchange	N	07-MAR-11 17:35:39	Expired	07-MAY-2011	06-MAY-2012	
000076639758	Fuels Safety Licence-Facility-Propane Cylinder	Fuels Safety Licence-Facility-Propane Cylinder	FS CYLINDER EXCHANGE LICENCE	Fuels Safety Licence - Cylinder Exchange	N	07-MAR-12 17:36:08	Terminated	07-MAY-2012	06-MAY-2013	10-AUG-2012
000198116	Fuels Safety Licence-Facility-Propane Cylinder	Fuels Safety Licence-Facility-Propane Cylinder	FS CYLINDER EXCHANGE LICENCE	Fuels Safety Licence - Cylinder Exchange	N		Expired	17-AUG-2012	16-AUG-2013	
000198116	Fuels Safety Licence-Facility-Propane Cylinder	Fuels Safety Licence-Facility-Propane Cylinder	FS CYLINDER EXCHANGE LICENCE	Fuels Safety Licence - Cylinder Exchange	N	17-JUN-13 17:34:34	Expired	17-AUG-2013	16-AUG-2014	
000198116	Fuels Safety Licence-Facility-Propane Cylinder	Fuels Safety Licence-Facility-Propane Cylinder	FS CYLINDER EXCHANGE LICENCE	Fuels Safety Licence - Cylinder Exchange	N	17-JUN-14 17:32:33	Active	17-AUG-2014	16-AUG-2015	

Copyright 2006, Oracle Corporation. All rights reserved.

D02-01 – Woodroffe 1545

15 August 2012

Mirwais Wardak
6161278 Canada Inc.
49 Coronet Ave
Nepean, ON K2G 6S3

Dear Mr. Wardak:

Re: 1545 Woodroffe Avenue
Receipt Number: 77660

This will acknowledge receipt of your request confirming that a propane cylinder exchange program is permitted at the above-mentioned location. The City has no concerns with a propane cylinder exchange facility use accessory to the store operation at this location.

We wish to advise that this property is presently subject to the provisions of Zoning By-law 2008-250, as amended, in a zone designated as GM15 H(9.5). This is a *General Mixed Use* zone designation that provides for a range of commercial uses as defined in Section 187(1) and 188(15) of the By-law. It should be noted that this approval is for zoning purposes only and does not confirm that the location of the tank storage facility meets fire code regulations. The location of the cage will also be subject to all Technical Standard and Safety Authority Guidelines, and to all existing zoning and setback requirements.

If, in order to achieve compliance with the above, the site or building is required to be altered to accommodate this use, the municipality may in turn require that the owner apply for and receive site plan approval, or apply for building permits, prior to the use being established on the lot. Further, municipal requirements would be determined based on the extent of any proposed alterations to the site or the building.

We trust this information is of assistance to you and wish to emphasize that our response was formulated based on the information provided to us. Should circumstances change, or you require further information, please contact the undersigned at 613-580-2424, ext. 13409.

Yours truly,

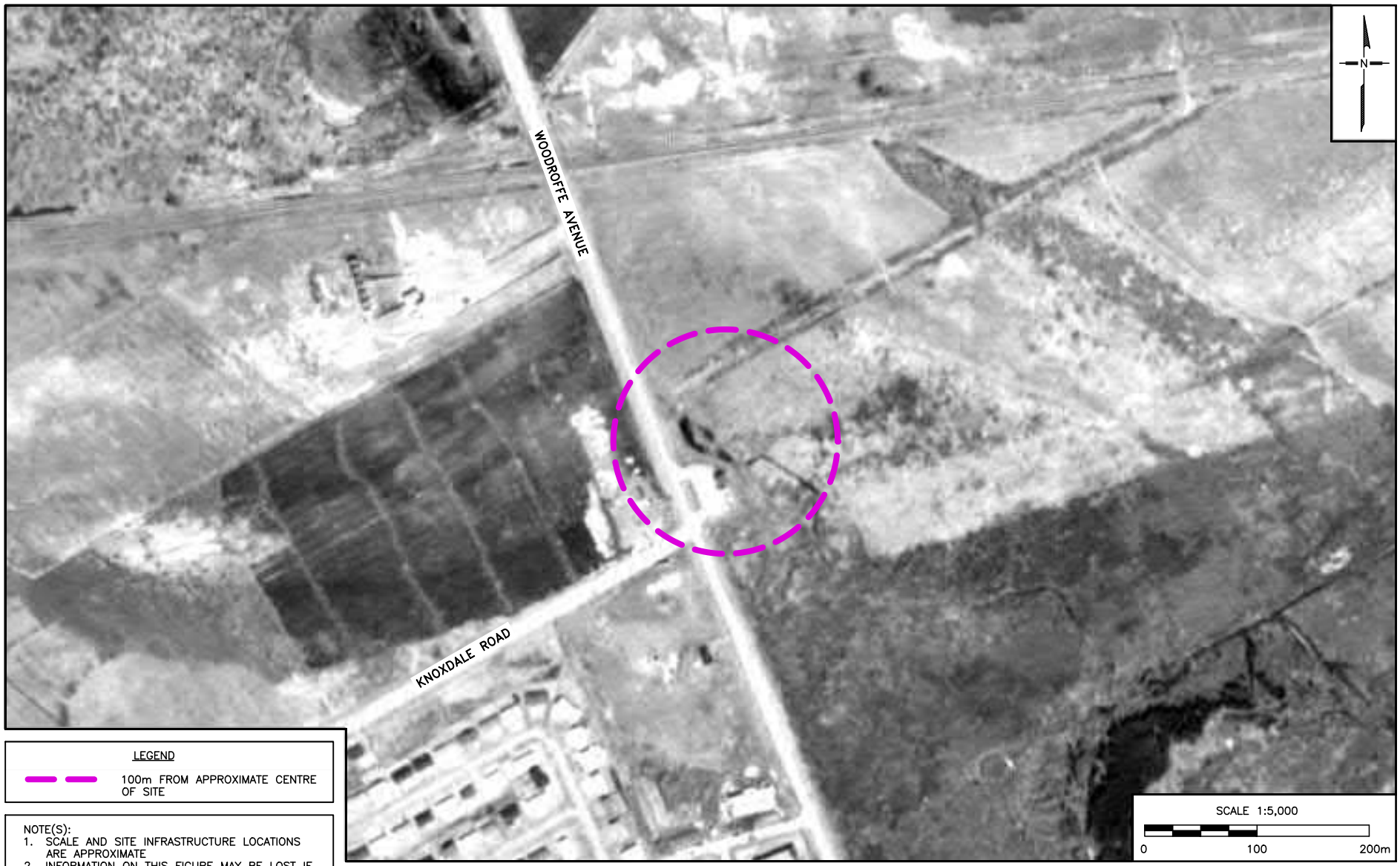
Amanda Marsh
Development Information Officer – West Area
Planning and Growth Management Department

City of Ottawa
110 Laurier Avenue West
Ottawa, ON K1P 1J1
Tel: (613) 580-2424
Amanda.Marsh@ottawa.ca

Ville d'Ottawa
110, avenue Laurier ouest
Ottawa, ON K1P 1J1
Tél.: (613) 580-2424
Amanda.Marsh@ottawa.ca

APPENDIX I

Aerial Photographs



LEGEND

100m FROM APPROXIMATE CENTRE OF SITE

NOTE(S):
1. SCALE AND SITE INFRASTRUCTURE LOCATIONS ARE APPROXIMATE
2. INFORMATION ON THIS FIGURE MAY BE LOST IF IT IS PRINTED, PHOTOCOPIED OR FAXED IN OTHER THAN ITS ORIGINAL SIZE AND COLOURS
3. 'm' : METRES

SOURCE(S):
1. CITY OF OTTAWA, ONLINE MAP, 1965 AERIAL IMAGE

SNC·LAVALIN

Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE, NEPEAN, ON		Title: AERIAL PHOTOGRAPH (1965)	
Project No: 628494	Filename: 043AP-628494-2	Date: JULY 2015	Dwg No: APPENDIX I.1
Drawn: AG	Verified: WW	Project Manager: MS	

PAGE FORMAT: 8.5x11

FILENAME: P:\IOL\2015 Phase 1 Bundle\628494\4.0 Execution\4.7 Working Versions\043 (1545 WOODROFFE AVE, NEPEAN)\CAD_GIS\043AP-628494-2.dwg

LEGEND

100m FROM APPROXIMATE CENTRE OF SITE

NOTE(S):
1. SCALE AND SITE INFRASTRUCTURE LOCATIONS ARE APPROXIMATE
2. INFORMATION ON THIS FIGURE MAY BE LOST IF IT IS PRINTED, PHOTOCOPIED OR FAXED IN OTHER THAN ITS ORIGINAL SIZE AND COLOURS
3. 'm' : METRES

SOURCE(S):
1. GOOGLE EARTH PRO IMAGE, SEPTEMBER 24, 2013

SNC·LAVALIN

Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE, NEPEAN, ON		Title: AERIAL PHOTOGRAPH (2013)	
Project No: 628494	Filename: 043AP-628494-1	Date: JUNE 2015	Dwg No: APPENDIX I.2
Drawn: AG	Verified: WW	Project Manager: MS	

PAGE FORMAT: 8.5x11

FILENAME: P:\IOL\2015 Phase 1 Bundle\628494\4.0 Execution\4.7 Working Versions\043 (1545 WOODROFFE AVE, NEPEAN)\CAD_GIS\043AP-628494-1.dwg

1953 Aerial Photograph

1545 Woodroffe Avenue
Nepean, Ontario

1983 Aerial Photograph

1545 Woodroffe Avenue
Nepean, Ontario

O'CONNOR ASSOCIATES

N

1995 Aerial Photograph

1545 Woodroffe Avenue
Nepean, Ontario

APPENDIX J

Physical Setting

LEGEND

SITE PROPERTY LINE

SCALE 1:15000

0 300 600m

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 IN OTHER THAN ITS ORIGINAL SIZE AND COLOURS
3. 'm' : METRES

SOURCE(S):
1. NATURAL RESOURCES CANADA, ELECTRONIC TOPOGRAPHIC MAP, http://atlas.nrcan.gc.ca/site/english/toporama/index.html

SNC·LAVALIN

Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE NEPEAN, ON		Title: TOPOGRAPHIC MAP	
Project No: 628494	Filename: 042TO-628494-1.DWG	Date: JULY 2015	Dwg No: APPENDIX J
Drawn: EM	Verified: MS	Project Manager: MS	

PAGE FORMAT: 11x17

FILENAME: P:\Imperial Oil\2015 Phase I ESA Bundle\628494-ON3 Bundle\4.0 Execution\4.7 Working Versions\043 (1545 WOODROFFED AVE, NEPEAN)\CAD_04310-628494-1.dwg

APPENDIX K

Species at Risk

SPECIES AT RISK SEARCH RESULTS
1545 Woodroffe Avenue, Nepean, ON

EO ID	Species Name	Common Name	S Rank	Last Observed	MNR Status
58961	Gymnocarpium robertianum	Limestone Oak Fern	S2	1941	-
58930	Botrychium rugulosum	Rugulose Grapefern	S2	1936-10-09	-
22187	Cypripedium arietinum	Ram's-head Lady's-slipper	S3	1997-PRE	-
59011	Pinus rigida	Pitch Pine	S2	1969-07-23	-
59994	Elatine americana	American Waterwort	S3	1891-09-12	-
103672	Physconia subpallida	Pale-bellied Frost Lichen	S2	1902-05-06	END
35471	RESTRICTED	RESTRICTED	-	1890-07-10	-

S2 **Imperiled**—Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 **Vulnerable**—Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

APPENDIX L

Well Record Search Results

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
MARCH TOWNSHIP RF 02(035)	18 440264 5022257 W	2001/07 1119	12 08 08	FR 0070	050 / 250 005 / 1:0	NU		1532165 (234287) CLAY SAND BLDR 0048 GREN SNDS 0260
NEPEAN TOWNSHIP RF 01(024)	18 442991 5018412 W	1968/02 1503	05 05	FR 0090	030 / 040 010 / 1:0	DO		1509660 () MSND 0010 CLAY 0055 GRVL MSND 0062 LMSN 0091
NEPEAN TOWNSHIP RF 01(024)	18 442971 5018402 W	1969/10 1503	05	FR 0065	015 / 020 010 / 1:0	DO		1510400 () GREY CLAY SILT 0015 BLUE CLAY SILT 0051 GREY GRVL MSND 0056 GREY LMSN 0066
NEPEAN TOWNSHIP RF 01(024)	18 442881 5018432 W	1966/01 1503	05 05	FR 0082	014 / 020 010 / 1:0	DO		1504889 () MSND 0008 CLAY 0030 MSND 0058 LMSN 0084
NEPEAN TOWNSHIP RF 01(024)	18 442821 5018397 W	1965/10 1503	05 05	FR 0088	016 / 035 010 / 1:0	DO		1504872 () MSND 0006 CLAY 0027 FSND 0058 LMSN 0090
NEPEAN TOWNSHIP RF 01(024)	18 442906 5018442 W	1965/09 1503	05 05	FR 0074	018 / 018 010 / 1:0	DO		1504871 () MSND 0010 CLAY 0046 GRVL 0054 LMSN 0076
NEPEAN TOWNSHIP RF 01(024)	18 442831 5018402 W	1971/04 1802	02	FR 0100	005 / 102 020 / 1:0	DO		1511166 () MSND CLAY 0052 GRVL BLDR 0058 GREY LMSN 0080 GREY SNDS 0102
NEPEAN TOWNSHIP RF 01(024)	18 443051 5018452 W	1971/10 1558	05	FR 0075	015 / 020 030 / 1:0	DO		1511531 () BRWN MSND SILT 0008 GREY CLAY MSND 0020 BLUE CLAY SILT 0040 BRWN MSND 0060 GREY LMSN 0078
NEPEAN TOWNSHIP RF 01(024)	18 442781 5018432 W	1958/10 1301	04 04	FR 0056	003 / 025 010 / 1:0	DO		1504766 () MSND 0056 LMSN 0078
NEPEAN TOWNSHIP RF 01(024)	18 443016 5018542 W	1959/07 1628	04 04	FR 0085	006 / 020 010 / 2:0	DO		1504775 () MSND CLAY 0053 LMSN 0088
NEPEAN TOWNSHIP RF 01(024)	18 442921 5018492 W	1959/11 1802	03 03	FR 0082	009 / 020 010 / 2:0	DO		1504780 () CLAY 0065 LMSN 0085
NEPEAN TOWNSHIP RF 01(024)	18 443081 5018582 W	1960/12 1301	04 04	FR 0085	018 / 020 010 / 1:0	DO		1504803 () CSND 0071 GREY LMSN 0088

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(024)	18 443076 5018402 W	1961/01 3733	05 05	FR 0075	030 / 040 006 / 1:0	DO		1504805 () CLAY 0025 SILT 0045 GREY LMSN 0075
NEPEAN TOWNSHIP RF 01(024)	18 442811 5018442 W	1961/04 1301	05 05	FR 0090	030 / 040 010 / 1:0	DO		1504806 () MSND 0058 GREY LMSN 0092
NEPEAN TOWNSHIP RF 01(024)	18 443026 5018432 W	1961/07 1301	05 05	FR 0077	008 / 050 006 / 1:0	DO		1504812 () MSND 0061 GREY LMSN 0077
NEPEAN TOWNSHIP RF 01(024)	18 442946 5018462 W	1961/07 1301	05 05	FR 0075	008 / 050 006 / 1:0	DO		1504813 () MSND 0057 GREY LMSN 0075
NEPEAN TOWNSHIP RF 01(024)	18 442971 5018402 W	1961/08 3701	04 04	FR 0080	020 / 050 006 / 2:0	DO		1504820 () CLAY 0030 SILT 0055 GREY LMSN 0080
NEPEAN TOWNSHIP RF 01(024)	18 443081 5018537 W	1962/08 1503	05 05	FR 0078	013 / 015 010 / 1:0	DO		1504841 () MSND 0010 CLAY 0035 FSND 0055 LMSN 0079
NEPEAN TOWNSHIP RF 01(024)	18 442736 5018402 W	1963/08 1301	05 04 04	FR 0094	018 / 065 004 / 1:0	DO		1504850 () MSND 0057 GREY LMSN 0094
NEPEAN TOWNSHIP RF 01(024)	18 442856 5018462 W	1963/11 1603	02 02 04	FR 0117	010 / 030 015 / 2:0	DO		1504852 () MSND 0041 BLDR MSND GRVL 0057 LMSN 0105 SNDS 0117
NEPEAN TOWNSHIP RF 01(024)	18 442826 5018447 W	1964/07 1503	05 05	FR 0073	020 / 022 010 / 1:0	DO		1504857 () MSND 0057 LMSN 0075
NEPEAN TOWNSHIP RF 01(025)	18 442987 5019040 W	1973/02 3504	06	FR 0175 FR 0180	025 / 169 003 / 1:0	PS		1512482 () SAND 0056 SAND GRVL 0060 HPAN 0068 LMSN 0180
NEPEAN TOWNSHIP RF 01(025)	18 442827 5018725 L	1998/10 1558	06 06	UK 0061	016 / 035 050 / 1:0	ST		1530349 (194755) BRWN SAND 0006 BRWN CLAY 0014 GREY CLAY 0037 GREY SAND STNS 0052 GREY LMSN 0075
NEPEAN TOWNSHIP RF 01(025)	18 442827 5018725 L	1998/10 1558						1530348 (194754)

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(025)	18 442916 5018797 W	1957/11 1603	04 04	FR 0104	014 / 028 010 / 2:0	DO		1504894 () MSND 0055 BLCK LMSN 0104
NEPEAN TOWNSHIP RF 01(026)	18 442136 5018639 W	2012/05 1111	01			MT	9 10	7182514 (Z146993) A085435 A BRWN MSND SOFT DRY 0012 BRWN MSND SILT SOFT 0019
NEPEAN TOWNSHIP RF 01(026)	18 442135 5018639 W	2012/03 1111	01			MT	9	7182515 (Z146992) A085434 A BRWN MSND SOFT DRY 0012 BRWN MSND SILT SOFT 0019
NEPEAN TOWNSHIP RF 01(026)	18 441978 5018963 W	2011/12 1558	06	0240 0263	023 / 072 009 / 1:0	IR OT		7176389 (Z139736) A119646 BRWN SAND 0012 BRWN SAND 0029 GREY SAND STNS 0037 GREY LMSN 0173 GREY SNDS 0273
NEPEAN TOWNSHIP RF 01(026)	18 441931 5018812 W	1970/04 1558	05	FR 0133	020 / 020 020 / 1:0	DO		1510661 () BRWN MSND 0025 GREY MSND GRVL 0044 GREY LMSN 0056 BLUE SHLE 0080 BLCK LMSN SHLE 0110 GREY LMSN 0135
NEPEAN TOWNSHIP RF 01(026)	18 441818 5018866 W	1974/04 3504	06	FR 0150 FR 0173	035 / 049 006 / 1:0	DO		1514014 () SAND 0030 SAND GRVL 0056 LMSN 0173
NEPEAN TOWNSHIP RF 01(026)	18 442476 5019087 W	1956/11 3504	05 05	FR 0100 FR 0134	017 / 027 005 / 0:30	DO		1504954 () MSND 0041 GRVL 0045 BLUE LMSN 0135
NEPEAN TOWNSHIP RF 01(026)	18 442441 5019062 W	1956/11 3504	05 05	FR 0100 FR 0140	017 / 028 005 / 0:30	DO		1504955 () MSND 0042 GRVL 0046 BLUE LMSN 0143
NEPEAN TOWNSHIP RF 01(026)	18 442496 5019092 W	1956/11 3504	05 05	FR 0100 FR 0145	015 / 020 005 / 0:30	DO		1504956 () MSND 0043 HPAN 0050 BLUE LMSN 0148
NEPEAN TOWNSHIP RF 01(026)	18 442496 5019232 W	1956/11 3504	05 05	FR 0100 FR 0135	013 / 024 005 / 0:30	DO		1504957 () MSND 0040 GRVL 0045 BLUE LMSN 0137
NEPEAN TOWNSHIP RF 01(026)	18 442511 5019172 W	1956/11 3504	05 05	FR 0090 FR 0125 FR 0150	040 / 090 005 / 0:30	DO		1504958 () MSND 0045 HPAN 0051 BLUE LMSN 0145 GREY LMSN 0152

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(026)	18 442486 5019262 W	1956/11 3504	05 05	FR 0095 FR 0135	007 / 010 005 / 0:30	DO		1504959 () MSND 0031 GRVL 0037 BLUE LMSN 0136
NEPEAN TOWNSHIP RF 01(026)	18 442461 5019222 W	1956/12 3504	05 05	FR 0090 FR 0135	016 / 021 005 / 0:30	DO		1504960 () MSND 0042 HPAN 0050 BLUE LMSN 0138
NEPEAN TOWNSHIP RF 01(026)	18 442456 5019242 W	1956/12 3504	05 05	FR 0085 FR 0120 FR 0138	010 / 030 005 / 0:30	DO		1504961 () MSND 0037 GRVL 0040 BLUE LMSN 0140
NEPEAN TOWNSHIP RF 01(026)	18 442471 5019187 W	1956/12 3504	05 05	FR 0090 FR 0132	020 / 029 005 / 0:30	DO		1504962 () MSND 0045 GRVL HPAN 0050 BLUE LMSN 0135
NEPEAN TOWNSHIP RF 01(026)	18 442381 5019032 W	1956/12 3504	05 05	FR 0140	013 / 028 005 / 0:30	DO		1504963 () MSND 0040 GRVL 0045 BLUE LMSN 0140
NEPEAN TOWNSHIP RF 01(026)	18 442411 5019042 W	1957/01 3504	05 05	FR 0140	015 / 030 005 / 0:30	DO		1504964 () MSND 0045 LMSN 0140
NEPEAN TOWNSHIP RF 01(026)	18 442176 5019087 W	1957/07 3504	05 05	FR 0130	010 / 020 005 / 1:0	DO		1504965 () MSND 0037 LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442361 5019017 W	1957/07 3504	05 05	FR 0120	015 / 030 005 / 1:0	DO		1504966 () MSND 0047 LMSN 0120
NEPEAN TOWNSHIP RF 01(026)	18 442321 5019042 W	1957/08 3504	05 05	FR 0130	010 / 027 005 / 1:0	DO		1504967 () MSND 0042 LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442281 5019047 W	1957/08 3504	05 05	FR 0130	015 / 045 005 / 1:0	DO		1504968 () MSND 0042 LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442521 5019142 W	1957/10 3504	05 05	FR 0140	022 / 030 005 / 1:0	DO		1504969 () MSND 0050 LMSN 0140
NEPEAN TOWNSHIP RF 01(026)	18 442146 5019057 W	1958/01 3504	05 05	FR 0127	021 / 055 005 / 1:0	DO		1504971 () MSND 0040 LMSN 0127

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(026)	18 442011 5018577 W	1958/10 1301	06 06	FR 0099	015 / 026 010 / 1:0	DO		1504972 () CLAY MSND 0080 LMSN 0200
NEPEAN TOWNSHIP RF 01(026)	18 441871 5018872 W	1959/06 3504	05 05	FR 0125	016 / 035 005 / 1:0	DO		1504973 () MSND 0040 LMSN 0125
NEPEAN TOWNSHIP RF 01(026)	18 441851 5018912 W	1959/06 3504	05 05	FR 0140	015 / 040 005 / 1:0	DO		1504974 () MSND 0042 LMSN 0140
NEPEAN TOWNSHIP RF 01(026)	18 441761 5018722 W	1961/02 1603	04 04	FR 0101	013 / 032 004 / 2:0	DO		1504979 () CLAY 0020 MSND 0038 GREY LMSN 0101
NEPEAN TOWNSHIP RF 01(026)	18 441921 5018832 W	1962/03 1301	04 04	FR 0112	040 / 042 010 / 1:0	DO		1504980 () MSND 0049 ROCK 0052 LMSN 0112
NEPEAN TOWNSHIP RF 01(026)	18 441996 5018822 W	1962/04 1301	04 04	FR 0193	030 / 193 010 / 0:45	DO		1504981 () MSND 0060 LMSN 0193
NEPEAN TOWNSHIP RF 01(026)	18 442186 5019062 W	1962/07 1503	05 05	FR 0080 FR 0120 FR 0142	028 / 075 005 / 0:30	DO		1504982 () MSND 0025 CLAY 0040 MSND 0045 BLUE LMSN 0143
NEPEAN TOWNSHIP RF 01(026)	18 441991 5018957 W	1962/09 3504	06 06	FR 0100	020 / 100 006 / 1:0	CO		1504983 () MSND 0039 LMSN 0125
NEPEAN TOWNSHIP RF 01(026)	18 442921 5019072 W	1963/10 3504	05 05	FR 0068	015 / 100 007 / 0:30	PS		1504985 () MSND 0050 CLAY MSND STNS 0068 LMSN 0155
NEPEAN TOWNSHIP RF 01(026)	18 441971 5018807 W	1964/04 3504	05 05	FR 0130	045 / 055 007 / 1:0	DO		1504986 () MSND 0053 LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 443071 5019127 W	1965/11 3504	06 06	FR 0080 FR 0200	020 / 110 010 / 18:0	PS		1504993 () LOAM 0001 MSND 0036 HPAN 0068 GREY LMSN 0200
NEPEAN TOWNSHIP RF 01(026)	18 442301 5018992 W	1966/02 1503	05 05	FR 0100	015 / 035 010 / 1:0	DO		1504995 () MSND 0043 LMSN 0104

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE [2] CNTR [3]	CASING DIA [4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(026)	18 442226 5019027 W	1967/07 1603	04 02	FR 0226	021 / 030 006 / 3:0	DO		1504999 () MSND 0046 GRVL MSND BLDR 0049 LMSN 0185 SNDS 0226
NEPEAN TOWNSHIP RF 01(026)	18 442501 5019107 W	1957/09 3504	05 05	FR 0142	015 / 025 005 / 1:0	DO		1504903 () MSND 0050 LMSN 0142
NEPEAN TOWNSHIP RF 01(026)	18 442206 5018932 W	1956/04 3504	05 05	FR 0195	020 / 060 005 / 0:30	DO		1504904 () MSND GRVL 0047 LMSN 0195
NEPEAN TOWNSHIP RF 01(026)	18 441891 5018917 W	1956/01 3504	05 05	FR 0116	045 / 055 007 / 1:0	DO		1504906 () MSND GRVL 0047 LMSN 0116
NEPEAN TOWNSHIP RF 01(026)	18 441771 5018777 W	1953/04 1802	03 03	FR 0190	020 / 045 003 / 2:0	DO		1504910 () MSND 0053 LMSN 0193
NEPEAN TOWNSHIP RF 01(026)	18 442101 5018877 W	1956/01 3504	05 05	FR 0156	020 / 060 007 / 1:0	DO		1504911 () MSND GRVL 0043 LMSN 0156
NEPEAN TOWNSHIP RF 01(026)	18 441951 5018977 W	1956/03 3504	05 05	FR 0126	016 / 020 005 / 0:30	DO		1504912 () MSND GRVL 0045 LMSN 0126
NEPEAN TOWNSHIP RF 01(026)	18 441881 5018932 W	1956/03 3504	04 04	FR 0131	025 / 040 005 / 1:0	DO		1504913 () MSND GRVL 0044 LMSN 0131
NEPEAN TOWNSHIP RF 01(026)	18 441931 5018892 W	1956/04 3504	05 05	FR 0119	022 / 040 005 / 0:30	DO		1504914 () MSND GRVL 0053 LMSN 0119
NEPEAN TOWNSHIP RF 01(026)	18 441961 5018942 W	1956/04 3504	04 04	FR 0177	027 / 050 005 / 0:30	DO		1504915 () MSND GRVL 0050 LMSN 0177
NEPEAN TOWNSHIP RF 01(026)	18 442011 5018922 W	1956/04 3504	05 05	FR 0180	020 / 070 005 / 0:30	DO		1504916 () MSND GRVL 0036 LMSN 0180
NEPEAN TOWNSHIP RF 01(026)	18 441971 5018902 W	1956/04 3504	05 05	FR 0130	020 / 062 005 / 0:30	DO		1504917 () MSND GRVL 0045 LMSN 0130

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(026)	18 442116 5018937 W	1956/04 3504	05 05	FR 0130	017 / 050 005 / 0:30	DO		1504918 () GRVL MSND 0042 LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442081 5018912 W	1956/04 3504	05 05	FR 0160	020 / 060 002 / 0:30	DO		1504919 () MSND GRVL 0043 LMSN 0160
NEPEAN TOWNSHIP RF 01(026)	18 442071 5019042 W	1956/04 3504	05 05	FR 0130	014 / 040 005 / 0:30	DO		1504920 () MSND GRVL 0038 LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442131 5018897 W	1956/04 3504	05 05	FR 0135	010 / 035 005 / 0:30	DO		1504921 () MSND GRVL 0051 LMSN 0135
NEPEAN TOWNSHIP RF 01(026)	18 442231 5018952 W	1956/05 3504	05 05	FR 0165	020 / 060 005 / 0:30	DO		1504922 () MSND GRVL 0055 LMSN 0165
NEPEAN TOWNSHIP RF 01(026)	18 442086 5019007 W	1956/05 3504	05 05	FR 0129	013 / 036 005 / 0:30	DO		1504923 () MSND GRVL 0040 LMSN 0129
NEPEAN TOWNSHIP RF 01(026)	18 442261 5018962 W	1956/05 3504	05 05	FR 0090 FR 0130 FR 0170	020 / 035 005 / 0:30	DO		1504924 () MSND 0036 CSND 0045 HPAN 0056 BLUE LMSN 0172
NEPEAN TOWNSHIP RF 01(026)	18 442096 5018982 W	1956/05 3504	05 05	FR 0125 FR 0080	017 / 040 005 / 0:30	DO		1504925 () MSND 0030 HPAN 0035 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442001 5018912 W	1956/05 3504	05 05	FR 0070 FR 0130	017 / 030 005 / 0:30	DO		1504926 () MSND 0035 HPAN 0038 BLUE LMSN 0134
NEPEAN TOWNSHIP RF 01(026)	18 442071 5018942 W	1956/05 3504	05 05	FR 0075 FR 0130 FR 0155	020 / 045 005 / 0:30	DO		1504927 () MSND 0035 HPAN 0039 BLUE LMSN 0157
NEPEAN TOWNSHIP RF 01(026)	18 442071 5018867 W	1956/05 3504	05 05 05	FR 0100 FR 0155	020 / 060 005 / 0:30	DO		1504928 () MSND 0030 CSND 0038 HPAN 0092 BLUE LMSN 0158
NEPEAN TOWNSHIP RF 01(026)	18 442161 5018912 W	1956/05 3504	05 05	FR 0128 FR 0090	011 / 015 005 / 0:30	DO		1504929 () MSND 0040 CSND 0042 HPAN 0047 BLUE LMSN 0130

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(026)	18 441906 5018877 W	1956/06 3504	05 05	FR 0075 FR 0128	025 / 026 005 / 0:30	DO		1504930 () MSND 0040 GRVL 0047 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442256 5019132 W	1956/06 3504	05 05	FR 0135 FR 0085	015 / 046 005 / 0:30	DO		1504931 () MSND 0040 GRVL 0041 HPAN 0047 BLUE LMSN 0080 SNDS GRNT 0110 GREY LMSN GRNT 0139
NEPEAN TOWNSHIP RF 01(026)	18 442281 5019152 W	1956/06 3504	05 05	FR 0095 FR 0130	020 / 040 005 / 0:30	DO		1504932 () MSND 0038 GRVL 0041 HPAN 0046 BLUE LMSN 0070 SNDS 0077 GREY LMSN 0125 SNDS 0132
NEPEAN TOWNSHIP RF 01(026)	18 442276 5019022 W	1956/06 3504	05 05	FR 0060 FR 0131	006 / 019 005 / 0:30	DO		1504933 () MSND 0040 GRVL 0041 BLUE LMSN 0132
NEPEAN TOWNSHIP RF 01(026)	18 442206 5018992 W	1956/07 3504	05 05	FR 0130 FR 0080	022 / 057 005 / 0:30	DO		1504934 () MSND 0045 GRVL 0048 HPAN 0057 BLUE LMSN 0132
NEPEAN TOWNSHIP RF 01(026)	18 442161 5019032 W	1956/07 3504	05 05	FR 0173 FR 0120 FR 0085	022 / 080 005 / 0:30	DO		1504935 () MSND 0040 GRVL 0041 HPAN 0045 BLUE LMSN 0175
NEPEAN TOWNSHIP RF 01(026)	18 442191 5019007 W	1956/07 3504	05 05	FR 0100 FR 0158	025 / 053 005 / 0:30	DO		1504936 () MSND 0040 HPAN 0050 BLUE LMSN 0160
NEPEAN TOWNSHIP RF 01(026)	18 442266 5019102 W	1956/08 3504	05 05	FR 0075 FR 0130	018 / 036 005 / 0:30	DO		1504937 () MSND 0038 GRVL 0040 HPAN 0044 BLUE LMSN 0131
NEPEAN TOWNSHIP RF 01(026)	18 442306 5019087 W	1956/08 3504	05 05	FR 0075 FR 0128	015 / 038 005 / 0:30	DO		1504938 () MSND 0040 GRVL 0042 CSND GRVL 0043 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442356 5019197 W	1956/09 3504	05 05	FR 0145 FR 0090	027 / 072 005 / 0:30	DO		1504939 () MSND 0042 GRVL BLDR 0044 HPAN 0052 BLUE LMSN 0148
NEPEAN TOWNSHIP RF 01(026)	18 442286 5019132 W	1956/09 3504	05 05	FR 0095 FR 0142	029 / 054 005 / 0:30	DO		1504940 () MSND 0042 GRVL 0045 HPAN 0050 BLUE LMSN 0144

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE [2] CNTR [3]	CASING DIA [4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(026)	18 442301 5019102 W	1956/09 3504	05 05	FR 0085 FR 0125	017 / 033 005 / 0:30	DO		1504941 () MSND 0040 GRVL 0042 HPAN 0047 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442356 5019172 W	1956/09 3504	05 05	FR 0070 FR 0094	019 / 033 005 / 0:30	DO		1504942 () MSND 0047 GRVL 0048 HPAN 0055 BLUE LMSN 0070 GREY SHLE 0095
NEPEAN TOWNSHIP RF 01(026)	18 442111 5018972 W	1956/09 3504	05 05	FR 0090 FR 0128 FR 0065	018 / 040 005 / 0:30	DO		1504943 () MSND 0037 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442371 5019122 W	1956/09 3504	05 05	FR 0125 FR 0085	014 / 033 005 / 0:30	DO		1504944 () MSND 0045 GRVL 0048 HPAN 0052 BLUE LMSN 0129
NEPEAN TOWNSHIP RF 01(026)	18 442391 5019182 W	1956/10 3504	05 05	FR 0075 FR 0128	017 / 025 005 / 0:30	DO		1504945 () MSND 0043 HPAN BLDR 0050 BLUE LMSN 0132
NEPEAN TOWNSHIP RF 01(026)	18 442371 5019142 W	1956/10 3504	05 05	FR 0128 FR 0090	027 / 040 005 / 0:30	DO		1504946 () MSND 0045 MSND BLDR 0050 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442386 5019087 W	1956/10 3504	05 05	FR 0125 FR 0065 FR 0100	027 / 038 005 / 0:30	DO		1504947 () MSND 0045 HPAN 0050 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442411 5019127 W	1956/10 3504	05 05	FR 0100 FR 0128	030 / 038 005 / 0:30	DO		1504948 () MSND 0045 HPAN 0051 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442396 5019157 W	1956/10 3504	05 05	FR 0090 FR 0140	020 / 053 005 / 0:30	DO		1504949 () MSND 0040 HPAN 0048 BLUE LMSN 0145
NEPEAN TOWNSHIP RF 01(026)	18 442381 5019217 W	1956/10 3504	05 05	FR 0100 FR 0133	035 / 060 005 / 0:30	DO		1504950 () MSND 0045 HPAN 0051 BLUE LMSN 0135
NEPEAN TOWNSHIP RF 01(026)	18 442421 5019102 W	1956/10 3504	05 05	FR 0095 FR 0125	020 / 032 005 / 0:30	DO		1504951 () MSND 0045 HPAN 0051 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(026)	18 442486 5019142 W	1956/10 3504	05 05	FR 0100 FR 0140	025 / 075 005 / 0:30	DO		1504952 () MSND 0050 HPAN 0054 BLUE LMSN 0143

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(026)	18 442476 5019162 W	1956/10 3504	05 05	FR 0080 FR 0130	017 / 022 005 / 0:30	DO		1504953 () MSND 0049 GRVL 0054 BLUE LMSN 0133
NEPEAN TOWNSHIP RF 01(027)	18 441826 5019152 W	1956/03 3566	05 05	FR 0145	025 / 045 005 / 0:30	DO		1505013 () MSND GRVL 0036 LMSN 0145
NEPEAN TOWNSHIP RF 01(027)	18 441801 5019137 W	1956/03 3566	05 05	FR 0153	010 / 020 005 / 0:30	DO		1505014 () MSND GRVL 0035 LMSN 0153
NEPEAN TOWNSHIP RF 01(027)	18 441926 5019122 W	1956/05 3566	05 05	FR 0085 FR 0130	018 / 045 005 / 0:30	DO		1505015 () MSND 0030 HPAN 0034 BLUE LMSN 0133
NEPEAN TOWNSHIP RF 01(027)	18 441956 5019122 W	1956/06 3566	05 05	FR 0095 FR 0128	015 / 024 005 / 0:30	DO		1505016 () MSND 0003 BLCK MUCK 0006 FSND 0030 CSND 0034 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 441986 5019117 W	1956/06 3566	05 05	FR 0095 FR 0140	013 / 030 005 / 0:30	DO		1505017 () MSND 0030 GRVL 0034 BLUE LMSN 0144
NEPEAN TOWNSHIP RF 01(027)	18 442021 5019122 W	1956/06 3566	05 05	FR 0100 FR 0135	009 / 020 005 / 0:30	DO		1505018 () MSND 0028 CSND 0032 BLUE LMSN 0137
NEPEAN TOWNSHIP RF 01(027)	18 442116 5019122 W	1956/07 3566	05 05	FR 0130 FR 0070	012 / 017 005 / 0:30	DO		1505019 () MSND 0035 GRVL 0036 HPAN 0038 BLUE LMSN 0131
NEPEAN TOWNSHIP RF 01(027)	18 442056 5019172 W	1956/07 3566	05 05	FR 0129	012 / 013 005 / 0:30	DO		1505020 () MSND 0035 LMSN 0129
NEPEAN TOWNSHIP RF 01(027)	18 442061 5019082 W	1956/08 3566	05 05	FR 0125 FR 0085	011 / 019 005 / 0:30	DO		1505021 () MSND 0030 HPAN 0033 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442191 5019152 W	1956/08 3566	05 05	FR 0090 FR 0135	013 / 020 005 / 0:30	DO		1505022 () MSND 0038 GRVL 0040 HPAN 0043 BLUE LMSN 0136
NEPEAN TOWNSHIP RF 01(027)	18 442271 5019202 W	1956/08 3566	05 05	FR 0090 FR 0160	028 / 070 005 / 0:30	DO		1505023 () MSND 0040 GRVL 0042 HPAN 0048 BLDR 0049 BLUE LMSN 0163

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(027)	18 442151 5019132 W	1956/08 3566	05 05	FR 0129 FR 0100	011 / 012 005 / 0:30	DO		1505024 () MSND 0037 GRVL 0039 HPAN 0041 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442236 5019172 W	1956/09 3566	05 05	FR 0085 FR 0130	014 / 019 005 / 0:30	DO		1505025 () MSND 0035 GRVL 0037 HPAN 0042 BLUE LMSN 0132
NEPEAN TOWNSHIP RF 01(027)	18 442031 5019182 W	1956/09 3566	05 05	FR 0128 FR 0075	020 / 034 005 / 0:30	DO		1505026 () MSND 0030 CSND 0035 HPAN 0038 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442166 5019187 W	1956/09 3566	05 05	FR 0090 FR 0130	013 / 015 005 / 0:30	DO		1505027 () MSND 0035 MSND BLDR 0037 BLUE LMSN 0131
NEPEAN TOWNSHIP RF 01(027)	18 442126 5019177 W	1956/10 3566	05 05	FR 0100 FR 0128	013 / 013 005 / 0:30	DO		1505028 () MSND 0030 HPAN 0035 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442341 5019232 W	1956/10 3566	05 05	FR 0100 FR 0125	030 / 055 005 / 0:30	DO		1505029 () MSND 0040 HPAN 0045 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442471 5019322 W	1956/11 3566	05 05	FR 0140 FR 0100	017 / 035 005 / 0:30	DO		1505030 () MSND 0040 HPAN 0050 BLUE LMSN 0141
NEPEAN TOWNSHIP RF 01(027)	18 442481 5019302 W	1956/11 3566	05 05	FR 0133 FR 0100	005 / 009 005 / 0:30	DO		1505031 () MSND 0030 GRVL 0034 BLUE LMSN 0135
NEPEAN TOWNSHIP RF 01(027)	18 442441 5019287 W	1956/12 3566	05 05	FR 0085 FR 0133	007 / 011 005 / 0:30	DO		1505032 () MSND 0032 GRVL 0035 BLUE LMSN 0136
NEPEAN TOWNSHIP RF 01(027)	18 442376 5019262 W	1957/01 3566	05 05	FR 0135	020 / 060 005 / 0:30	DO		1505033 () MSND 0040 LMSN 0135
NEPEAN TOWNSHIP RF 01(027)	18 442441 5019422 W	1957/07 3566	05 05	FR 0129	006 / 016 005 / 1:0	DO		1505034 () MSND 0030 LMSN 0129
NEPEAN TOWNSHIP RF 01(027)	18 442171 5019182 W	1957/08 3566	04 04	FR 0130	016 / 020 005 / 1:0	DO		1505035 () MSND 0039 LMSN 0130

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(027)	18 442386 5019432 W	1957/09 3566	05 05	FR 0136	006 / 010 005 / 1:0	DO		1505036 () MSND BLDR 0030 LMSN 0136
NEPEAN TOWNSHIP RF 01(027)	18 442351 5019287 W	1957/09 3566	05 05	FR 0125	008 / 015 005 / 1:0	DO		1505037 () MSND 0035 LMSN 0125
NEPEAN TOWNSHIP RF 01(027)	18 442426 5019452 W	1957/09 3566	05 05	FR 0132	008 / 010 005 / 1:0	DO		1505038 () MSND 0029 LMSN 0132
NEPEAN TOWNSHIP RF 01(027)	18 442441 5019432 W	1957/09 3566	05 05	FR 0130	008 / 010 005 / 1:0	DO		1505039 () MSND BLDR 0029 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 441996 5019202 W	1957/10 3566	05 05	FR 0075	006 / 015 005 / 1:0	DO		1505040 () MSND 0029 LMSN 0075
NEPEAN TOWNSHIP RF 01(027)	18 442376 5019422 W	1957/10 3566	05 05	FR 0139	010 / 015 005 / 1:0	DO		1505041 () MSND 0030 LMSN 0139
NEPEAN TOWNSHIP RF 01(027)	18 442396 5019392 W	1957/11 3566	05 05	FR 0130	011 / 020 005 / 1:0	DO		1505042 () MSND 0028 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 441926 5019207 W	1957/11 3566	05 05	FR 0150	011 / 048 005 / 1:0	DO		1505043 () MSND 0027 LMSN 0150
NEPEAN TOWNSHIP RF 01(027)	18 442346 5019412 W	1957/12 3566	05 05	FR 0131	004 / 010 005 / 1:0	DO		1505044 () MSND 0029 LMSN 0131
NEPEAN TOWNSHIP RF 01(027)	18 442331 5019272 W	1957/12 3566	05 05	FR 0128	007 / 020 005 / 1:0	DO		1505045 () MSND 0035 LMSN 0128
NEPEAN TOWNSHIP RF 01(027)	18 442291 5019377 W	1958/01 3566	05 05	FR 0125	006 / 010 005 / 1:0	DO		1505046 () MSND BLDR 0029 LMSN 0125
NEPEAN TOWNSHIP RF 01(027)	18 442181 5019322 W	1958/01 3566	05 05	FR 0135	005 / 010 005 / 1:0	DO		1505047 () MSND BLDR 0028 LMSN 0135

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(027)	18 442061 5019222 W	1958/01 3566	05 05	FR 0130	004 / 010 005 / 1:0	DO		1505048 () MSND 0030 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442206 5019337 W	1958/01 3566	05 05	FR 0125	004 / 010 005 / 1:0	DO		1505049 () MSND 0030 LMSN 0125
NEPEAN TOWNSHIP RF 01(027)	18 442456 5019362 W	1958/01 3566	05 05	FR 0133	004 / 010 005 / 1:0	DO		1505050 () MSND 0034 LMSN 0133
NEPEAN TOWNSHIP RF 01(027)	18 442346 5019372 W	1958/01 3566	05 05	FR 0130	004 / 010 005 / 1:0	DO		1505051 () MSND 0030 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442101 5019232 W	1958/01 3566	05 05	FR 0130	010 / 015 005 / 1:0	DO		1505052 () MSND 0033 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442321 5019357 W	1958/01 3566	05 05	FR 0130	004 / 010 005 / 1:0	DO		1505053 () MSND 0030 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442231 5019212 W	1958/02 3566	05 05	FR 0163	020 / 055 005 / 1:0	DO		1505054 () MSND 0048 LMSN 0163
NEPEAN TOWNSHIP RF 01(027)	18 442261 5019322 W	1958/02 3566	05 05	FR 0130	005 / 010 005 / 1:0	DO		1505055 () MSND 0030 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442291 5019337 W	1958/02 3566	05 05	FR 0133	006 / 010 005 / 1:0	DO		1505056 () MSND 0032 LMSN 0133
NEPEAN TOWNSHIP RF 01(027)	18 442241 5019312 W	1958/03 3566	05 05	FR 0130	008 / 015 005 / 1:0	DO		1505057 () MSND 0034 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442276 5019327 W	1958/03 3566	05 05	FR 0133	008 / 012 005 / 1:0	DO		1505058 () MSND 0034 LMSN 0133
NEPEAN TOWNSHIP RF 01(027)	18 442131 5019252 W	1958/03 3566	05 05	FR 0130	010 / 020 005 / 1:0	DO		1505059 () MSND 0034 LMSN 0130

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(027)	18 442471 5019322 W	1958/03 3566	05 05	FR 0130	006 / 020 005 / 1:0	DO		1505060 () MSND 0035 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442446 5019407 W	1958/03 3566	05 05	FR 0130	007 / 020 005 / 1:0	DO		1505061 () MSND 0038 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 441981 5019207 W	1958/03 3566	05 05	FR 0130	015 / 030 005 / 1:0	DO		1505062 () MSND 0031 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442191 5019282 W	1958/04 3566	05 05	FR 0130	006 / 036 005 / 1:0	DO		1505063 () MSND 0034 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442121 5019092 W	1958/05 3566	05 05	FR 0125	010 / 020 005 / 1:0	DO		1505064 () MSND 0040 LMSN 0125
NEPEAN TOWNSHIP RF 01(027)	18 442141 5019262 W	1958/06 3566	05 05	FR 0130	010 / 030 005 / 1:0	DO		1505065 () MSND 0030 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442241 5019232 W	1958/10 3701	05 05	FR 0100 FR 0130	022 / 040 005 / 1:0	DO		1505066 () MSND 0050 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 442321 5019262 W	1959/05 3504	05 05	FR 0115	015 / 030 005 / 1:0	DO		1505067 () SAND 0038 LMSN 0115
NEPEAN TOWNSHIP RF 01(027)	18 441941 5018992 W	1962/05 1301	04 04	FR 0110	018 / 055 010 / 1:0	DO		1505069 () MSND 0052 GREY LMSN 0119
NEPEAN TOWNSHIP RF 01(027)	18 441821 5018987 W	1961/04 3504	05 05	FR 0126	030 / 060 010 / 1:0	DO		1505070 () MSND 0049 GREY LMSN 0126
NEPEAN TOWNSHIP RF 01(027)	18 442336 5019282 W	1961/07 1558	05 06	FR 0085 FR 0060	013 / 024 010 / 1:0	DO		1505071 () MSND 0036 BLUE LMSN 0080 GREY LMSN 0100
NEPEAN TOWNSHIP RF 01(027)	18 442086 5019272 W	1963/03 1558	05 05	FR 0128 FR 0090	005 / 014 010 / 1:0	DO		1505072 () MSND 0015 CLAY 0022 GRVL MSND 0028 BLUE LMSN 0130

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(027)	18 442021 5019237 W	1964/09 3701	05 04	FR 0040 FR 0053	010 / 020 005 / 2:0	DO		1505074 () CLAY 0003 CLAY ROCK 0006 CLAY MSND 0027 GREY LMSN 0053
NEPEAN TOWNSHIP RF 01(027)	18 442306 5019392 W	1965/09 1558	05 05	FR 0108	008 / 008 010 / 1:0	DO		1505075 () CLAY 0018 CLAY BLDR 0022 LMSN 0110
NEPEAN TOWNSHIP RF 01(027)	18 442286 5019382 W	1966/07 3504	05 05	FR 0050	012 / 013 007 / 2:0	DO		1505076 () BLCK MUCK BLDR 0021 LMSN 0063
NEPEAN TOWNSHIP RF 01(027)	18 441911 5019182 W	1968/07 1802	06 06	FR 0070	020 / 080 007 / 0:30	DO		1509658 () FILL 0004 MSND 0033 LMSN 0100
NEPEAN TOWNSHIP RF 01(027)	18 442251 5019382 W	1968/07 1503	05 05	FR 0071	009 / 020 010 / 1:0	DO		1509664 () FILL 0007 MSND 0015 CLAY 0021 LMSN 0026 GRVL 0027 LMSN 0073
NEPEAN TOWNSHIP RF 01(027)	18 442391 5019302 W	1971/03 3504	05	FR 0134 FR 0136	015 / 045 008 / 1:0	DO		1511123 () BLCK MUCK 0005 MSND 0032 GREY LMSN 0136
NEPEAN TOWNSHIP RF 01(027)	18 442300 5019262 W	1972/09 1836	06	FR 0235	010 / 240 001 / 1:0	DO		1512094 () SAND 0034 LMSN 0170 SNDS 0240
NEPEAN TOWNSHIP RF 01(027)	18 442411 5019364 W	1972/11 1558	06	FR 0070	007 / 040 010 / 1:0	DO		1512213 () BRWN SAND GRVL BLDR 0004 BLCK MUCK 0008 GREY SAND GRVL BLDR 0027 GREY LMSN 0030 GREY LMSN 0073
NEPEAN TOWNSHIP RF 01(027)	18 442272 5019440 W	1974/02 1558	06 06	FR 0048 FR 0080	010 / 050 015 / 1:0	DO		1513902 () BLCK MUCK 0012 GREY CLAY 0026 BLCK LMSN 0085
NEPEAN TOWNSHIP RF 01(027)	18 442440 5019393 W	1974/11 1558	06 05	FR 0090	007 / 018 020 / 1:0	DO		1514454 () BRWN SAND FILL LOOS 0003 BLUE CLAY SILT LOOS 0020 GREY SAND PCKD 0029 GREY LMSN 0092
NEPEAN TOWNSHIP RF 01(027)	18 442503 5019545 L	1991/09 1558	06 06	UK 0115 UK 0289	035 / 100 015 / 1:0	DO		1525803 (100131) BRWN SAND 0042 BRWN SAND GRVL 0044 GREY LMSN 0210 WHIT SNDS 0298
NEPEAN TOWNSHIP RF 01(027)	18 441691 5018932 W	1952/07 1802	03 03	FR 0138	016 / 030 002 / 2:0	DO		1505001 () MSND 0052 LMSN 0142

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(027)	18 441831 5019092 W	1956/01 3566	05 05	FR 0119	012 / 061 007 / 1:0	DO		1505002 () MSND GRVL 0038 LMSN 0119
NEPEAN TOWNSHIP RF 01(027)	18 441831 5019072 W	1956/01 3566	05 05	FR 0122	016 / 030 007 / 0:30	DO		1505003 () MSND 0037 LMSN 0122
NEPEAN TOWNSHIP RF 01(027)	18 441841 5019042 W	1956/02 3566	05 05	FR 0122	013 / 036 007 / 1:0	DO		1505004 () MSND GRVL 0038 LMSN 0122
NEPEAN TOWNSHIP RF 01(027)	18 441881 5018972 W	1956/02 3566	05 05	FR 0122	016 / 030 007 / 0:30	DO		1505005 () MSND GRVL 0040 LMSN 0122
NEPEAN TOWNSHIP RF 01(027)	18 441861 5018997 W	1956/02 3566	05 05	FR 0129	012 / 037 007 / 0:30	DO		1505006 () MSND GRVL 0039 LMSN 0129
NEPEAN TOWNSHIP RF 01(027)	18 441931 5019012 W	1956/03 3566	05 05	FR 0130	016 / 018 005 / 0:30	DO		1505007 () MSND GRVL 0045 LMSN 0130
NEPEAN TOWNSHIP RF 01(027)	18 441921 5019042 W	1956/03 3566	05 05	FR 0125	020 / 022 007 / 0:30	DO		1505008 () MSND GRVL 0042 LMSN 0125
NEPEAN TOWNSHIP RF 01(027)	18 441906 5019072 W	1956/03 3566	05 05	FR 0120	020 / 033 005 / 0:30	DO		1505009 () MSND GRVL 0040 LMSN 0120
NEPEAN TOWNSHIP RF 01(027)	18 441906 5019092 W	1956/03 3566	05 05	FR 0125	019 / 029 005 / 0:30	DO		1505010 () MSND GRVL 0038 LMSN 0125
NEPEAN TOWNSHIP RF 01(027)	18 441881 5019132 W	1956/03 3566	05 05	FR 0155	020 / 050 005 / 0:30	DO		1505011 () MSND GRVL 0034 LMSN 0155
NEPEAN TOWNSHIP RF 01(027)	18 441871 5019167 W	1956/03 3566	05 05	FR 0122	020 / 030 005 / 0:30	DO		1505012 () MSND GRVL 0038 LMSN 0122
NEPEAN TOWNSHIP RF 01(028)	18 441541 5019362 W	1950/04 3725	05 05	FR 0060	020 / 030 / :0	DO		1505079 () MSND 0035 BLCK LMSN 0075

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE [2] CNTR [3]	CASING DIA [4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(028)	18 443008 5020414 W	1975/10 1558	06 06	FR 0210	050 / 100 020 / 1:0	DO		1515062 () BRWN SAND BLDR 0024 GREY LMSN 0165 GREY SNDS LMSN LYRD 0185 WHIT SNDS 0212
NEPEAN TOWNSHIP RF 01(029)	18 443071 5020722 W	1961/08 1802	06 06	FR 0050 FR 0054	010 / 065 020 / 1:0	IN		1505081 () FSND 0038 GREY LMSN 0070
NEPEAN TOWNSHIP RF 01(029)	18 443031 5020742 W	1958/07 3566	05 05	FR 0080	025 / 030 005 / 1:0	DO		1505080 () MSND 0037 LMSN 0080
NEPEAN TOWNSHIP RF 01(030)	18 441100 5020412 W	2011/10 1844						7176824 (M08754) A110675 P
NEPEAN TOWNSHIP RF 01(030)	18 442231 5021022 W	1958/06 3701	10 10	FR 0140 FR 0195 FR 0200 FR 0070	004 / 160 025 / 6:0	PS		1505082 () CLAY 0014 SILT 0029 GREY LMSN 0195 SNDS 0200
NEPEAN TOWNSHIP RF 01(030)	18 441108 5020345 W	2010/03 1844	02			MO		7146133 (M05577) A090653 0000 GREY GRVL FILL CGRD 0002 BRWN SAND FILL MGRD 0003 GREY SILT SAND FGRD 0010 GREY CLAY 0011 SAND 0022
NEPEAN TOWNSHIP RF 01(031)	18 442191 5021402 W	1958/06 1301	06 06	FR 0090	008 / 010 008 / 0:30	PS		1505083 () CLAY 0028 LMSN 0207
NEPEAN TOWNSHIP RF 01(031)	18 440906 5020792 W	2013/10 4875	08			DE		7210355 (Z163807) A
NEPEAN TOWNSHIP RF 01(031)	18 441471 5020852 W	1958/12 3701	08 08	FR 0100 FR 0215 FR 0260 FR 0275	002 / 250 050 / 48:0	MN		1505084 () CLAY 0030 MSND 0032 LMSN 0215 SNDS 0260 LMSN ROCK GRNT 0275
NEPEAN TOWNSHIP RF 01(031)	18 441046 5020993 W	2013/10 4875				DE		7210353 (Z163805)
NEPEAN TOWNSHIP RF 01(031)	18 440877 5020885 W	2013/10 4875	08			DE		7210354 (Z163806) A
NEPEAN TOWNSHIP RF 01(032)	18 442206 5021657 W	1949/12 3718	04 04	FR 0092	025 / 030 004 / 1:0	DO		1505085 () GREY CLAY 0025 BLUE LMSN 0092

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442601 5021962 W	1950/08 4216	04 04	FR	033 / 050 005 / 1:0	DO		1505086 () CLAY 0019 HPAN 0038 LMSN 0094
NEPEAN TOWNSHIP RF 01(032)	18 442451 5022122 W	1950/08 4216	05 05	FR	031 / 048 005 / 1:0	DO		1505087 () CLAY 0019 LMSN 0095
NEPEAN TOWNSHIP RF 01(032)	18 441356 5021122 W	1956/05 3701	10 10	FR 0100 FR 0200 FR 0150	002 / 105 425 / 72:0	PS		1505088 () CLAY 0032 BLDR 0042 MSND 0092 GREY LMSN 0200
NEPEAN TOWNSHIP RF 01(032)	18 442601 5021992 W	1950/09 4216	05 05	FR	008 / 011 008 / 0:30	DO		1505089 () CLAY 0020 SHLE 0032 SHLE LMSN 0072
NEPEAN TOWNSHIP RF 01(032)	18 442421 5022057 W	1950/11 4216	05 05	FR 0078	018 / 021 007 / 0:30	DO		1505090 () CLAY 0016 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 442471 5022132 W	1951/01 4216	05 05	FR 0060 FR 0090	014 / 030 008 / 0:30	DO		1505091 () CLAY 0019 LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 442506 5021972 W	1951/02 4216	05 05	FR 0078 FR 0060	010 / 016 008 / 0:15	DO		1505092 () CLAY 0018 HPAN 0022 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 442541 5021997 W	1951/02 4216	05 05	FR 0060 FR 0084	010 / 016 008 / 0:20	DO		1505093 () CLAY 0012 CLAY BLDR 0025 LMSN 0084
NEPEAN TOWNSHIP RF 01(032)	18 442551 5021967 W	1951/02 4216	04 04	FR 0060 FR 0084	010 / 016 008 / 0:20	DO		1505094 () CLAY 0012 CLAY BLDR 0025 LMSN 0084
NEPEAN TOWNSHIP RF 01(032)	18 442431 5022017 W	1951/04 4216	04 04	FR 0078 FR 0050	021 / 023 008 / 0:20	DO		1505095 () CLAY 0015 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 442386 5022052 W	1951/04 4216	04 04	FR 0050 FR 0079	021 / 023 008 / 0:10	DO		1505096 () CLAY 0006 CLAY MSND 0015 LMSN 0079
NEPEAN TOWNSHIP RF 01(032)	18 442396 5022032 W	1951/05 4216	04 04	FR 0084 FR 0065	016 / 019 008 / 0:10	DO		1505097 () CLAY 0016 LMSN 0084

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE [2] CNTR [3]	CASING DIA [4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442461 5022022 W	1951/06 4216	04 04	FR 0096 FR 0065	016 / 019 008 / 11:0	DO		1505098 () CLAY 0016 SHLE 0022 LMSN 0096
NEPEAN TOWNSHIP RF 01(032)	18 442506 5021917 W	1951/07 4216	04 04	FR 0079 FR 0060	021 / 023 008 / 0:10	DO		1505099 () CLAY 0015 BLDR 0020 SHLE 0023 LMSN 0079
NEPEAN TOWNSHIP RF 01(032)	18 442541 5021892 W	1951/07 4216	04 04	FR 0074 FR 0065	019 / 021 008 / 0:10	DO		1505100 () CLAY 0020 SHLE 0023 LMSN 0074
NEPEAN TOWNSHIP RF 01(032)	18 442316 5021982 W	1951/09 4216	04 04	FR 0060 FR 0088	026 / 036 008 / 0:20	DO		1505101 () CLAY 0015 LMSN 0088
NEPEAN TOWNSHIP RF 01(032)	18 442446 5021942 W	1951/10 4216	04 04	FR 0080 FR 0060	020 / 022 008 / 0:20	DO		1505102 () CLAY 0006 BLDR SHLE 0018 LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 442336 5021867 W	1951/10 4216	04 04	FR 0079 FR 0040	020 / 022 008 / 0:10	DO		1505103 () CLAY 0005 BLDR 0007 CLAY 0014 LMSN 0079
NEPEAN TOWNSHIP RF 01(032)	18 442621 5021852 W	1951/10 4216	04 04	FR 0040 FR 0085	018 / 020 008 / 0:20	DO IR		1505104 () CLAY BLDR 0014 SHLE 0016 LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 442566 5022072 W	1952/03 4216	04 04	FR 0069 FR 0050	010 / 012 008 / 0:20	DO		1505105 () CLAY 0020 LMSN 0069
NEPEAN TOWNSHIP RF 01(032)	18 442296 5021972 W	1952/04 3601	04 04	FR 0085 FR 0065	020 / 045 005 / 0:12	DO		1505106 () LOAM CLAY BLDR 0014 LMSN 0097
NEPEAN TOWNSHIP RF 01(032)	18 442316 5022052 W	1952/04 4216	04 04	FR 0098 FR 0060	021 / 035 008 / 0:20	DO		1505107 () CLAY 0015 SHLE 0017 LMSN 0098
NEPEAN TOWNSHIP RF 01(032)	18 442486 5021947 W	1952/04 4216	04 04	FR 0054 FR 0040	015 / 035 008 / 0:20	DO		1505108 () CLAY BLDR 0018 SHLE 0020 LMSN 0054
NEPEAN TOWNSHIP RF 01(032)	18 442466 5021942 W	1952/05 4216	04 04	FR 0040 FR 0073	008 / 012 008 / 0:20	DO		1505109 () CLAY 0018 LMSN 0073

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442436 5022112 W	1952/05 4216	04 04	FR 0040 FR 0087	006 / 008 008 / 0:20	DO		1505110 () CLAY 0017 LMSN 0087
NEPEAN TOWNSHIP RF 01(032)	18 442556 5022102 W	1952/06 4216	05 05	FR 0070 FR 0040	006 / 008 008 / 0:20	DO		1505111 () CLAY 0016 LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 442521 5022162 W	1952/06 4216	05 05	FR 0040	006 / 008 008 / 0:20	DO		1505112 () BLUE CLAY 0018 GREY LMSN 0120
NEPEAN TOWNSHIP RF 01(032)	18 442526 5022092 W	1952/06 4216	04 04	FR 0040 FR 0068	006 / 008 008 / 0:20	DO		1505113 () CLAY 0016 LMSN 0068
NEPEAN TOWNSHIP RF 01(032)	18 442271 5021962 W	1952/07 4216	05 05	FR 0074 FR 0040	022 / 023 008 / 0:20	DO		1505114 () CLAY 0016 LMSN 0074
NEPEAN TOWNSHIP RF 01(032)	18 442226 5021942 W	1952/08 4216	05 05	FR 0060 FR 0085	021 / 023 008 / 0:20	DO		1505115 () CLAY 0012 LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 442286 5021922 W	1952/08 4216	04 04	FR 0040 FR 0077	017 / 020 008 / 0:20	DO		1505116 () CLAY 0015 LMSN 0077
NEPEAN TOWNSHIP RF 01(032)	18 442411 5021982 W	1952/09 4216	04 04	FR 0040 FR 0080	017 / 019 008 / 0:20	DO		1505117 () CLAY 0016 LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 442371 5021992 W	1952/10 4216	04 04	FR 0060 FR 0081	017 / 020 008 / 0:20	DO		1505118 () CLAY 0020 LMSN 0081
NEPEAN TOWNSHIP RF 01(032)	18 442406 5021872 W	1952/10 4216	04 04	FR 0040 FR 0067	017 / 020 008 / 0:20	DO		1505119 () CLAY 0015 LMSN 0067
NEPEAN TOWNSHIP RF 01(032)	18 442301 5021852 W	1952/10 4216	04 04	FR 0040 FR 0081	013 / 015 008 / 0:20	DO		1505120 () CLAY 0010 LMSN 0081
NEPEAN TOWNSHIP RF 01(032)	18 442526 5021922 W	1952/11 4216	04 04	FR 0060 FR 0081	013 / 015 008 / 0:10	DO		1505121 () CLAY 0012 BLDR 0014 SHLE 0020 LMSN 0081

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442376 5021852 W	1952/11 3504	04 04	FR 0055 FR 0040 FR 0030	014 / 025 005 / 1:0	DO		1505122 () SILT 0004 CLAY MSND STNS 0016 LMSN 0081
NEPEAN TOWNSHIP RF 01(032)	18 442156 5021962 W	1952/12 4216	04 04	FR 0083 FR 0060	025 / 027 005 / 0:10	DO		1505123 () CLAY 0012 LMSN 0083
NEPEAN TOWNSHIP RF 01(032)	18 442216 5021992 W	1952/12 3002	04 04	FR 0075 FR 0050	014 / 016 003 / 0:20	DO		1505124 () BRWN CLAY HPAN 0012 GREY LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 442311 5021862 W	1952/12 3718	04 04 04	FR 0080	008 / 018 / :0	DO		1505125 () CLAY 0020 STNS 0028 LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 442361 5021957 W	1952/12 4216	05 05	FR 0088 FR 0040	013 / 015 008 / 0:20	DO		1505126 () CLAY 0020 LMSN 0088
NEPEAN TOWNSHIP RF 01(032)	18 442456 5021892 W	1953/01 3504	04 04	FR 0050 FR 0084 FR 0070	010 / 025 004 / 1:0	DO		1505127 () CLAY MSND STNS 0014 ROCK 0084
NEPEAN TOWNSHIP RF 01(032)	18 442011 5021772 W	1953/02 4216	05 05	FR 0040 FR 0085	013 / 015 008 / 0:20	DO		1505128 () CLAY 0004 SNDS 0085
NEPEAN TOWNSHIP RF 01(032)	18 442386 5021852 W	1953/01 3504	04 04	FR 0083 FR 0050 FR 0070	010 / 025 004 / 1:0	DO		1505129 () CLAY MSND STNS 0016 LMSN 0083
NEPEAN TOWNSHIP RF 01(032)	18 442326 5021822 W	1953/01 3504	04 04	FR 0085 FR 0050 FR 0070	010 / 025 004 / 1:0	DO		1505130 () CLAY MSND STNS 0012 ROCK 0085
NEPEAN TOWNSHIP RF 01(032)	18 442431 5021822 W	1953/01 3504	04 04	FR 0070 FR 0084 FR 0050	010 / 025 004 / 1:0	DO		1505131 () CLAY MSND STNS 0016 ROCK 0084
NEPEAN TOWNSHIP RF 01(032)	18 442216 5021807 W	1953/01 4832	04 04	FR 0075 FR 0060	013 / 025 003 / 0:20	DO		1505132 () LOAM 0006 LMSN 0079

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442461 5021842 W	1953/01 3504	04 04	FR 0070 FR 0050 FR 0079	010 / 025 004 / 1:0	DO		1505133 () CLAY MSND STNS 0017 ROCK 0079
NEPEAN TOWNSHIP RF 01(032)	18 442511 5021862 W	1953/01 3504	04 04	FR 0050 FR 0070 FR 0088	010 / 025 004 / 1:0	DO		1505134 () CLAY MSND STNS 0014 ROCK 0088
NEPEAN TOWNSHIP RF 01(032)	18 442301 5021802 W	1953/01 4216	04 04	FR 0040 FR 0082	013 / 015 007 / 0:20	DO		1505135 () CLAY 0006 LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 442301 5021752 W	1953/02 3601	04 04	FR 0030	018 / / 1:0	DO		1505136 () CLAY 0010 SNDS 0030 LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 442031 5021842 W	1953/02 4216	04 04	FR 0040 FR 0085	014 / 016 008 / 0:20	DO		1505137 () CLAY 0006 BRWN LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 442211 5021822 W	1953/02 4216	05 05	FR 0079 FR 0040	013 / 015 008 / 0:20	DO		1505138 () CLAY 0003 BRWN LMSN 0079
NEPEAN TOWNSHIP RF 01(032)	18 442181 5021682 W	1953/02 3504	04 04	FR 0050 FR 0070 FR 0086	010 / 025 004 / 1:0	DO		1505139 () CLAY MSND STNS 0016 ROCK 0086
NEPEAN TOWNSHIP RF 01(032)	18 442396 5021992 W	1953/02 4216	05 05	FR 0040 FR 0085	013 / 015 008 / 0:20	DO		1505140 () CLAY 0004 SNDS 0085
NEPEAN TOWNSHIP RF 01(032)	18 442386 5021802 W	1953/02 3504	04 04	FR 0050 FR 0070 FR 0088	010 / 025 004 / 1:0	DO		1505141 () CLAY MSND STNS 0017 ROCK 0088
NEPEAN TOWNSHIP RF 01(032)	18 442171 5021792 W	1953/03 4216	05 05	FR 0040 FR 0077	002 / 008 008 / 0:20	DO		1505142 () CLAY 0004 BRWN LMSN 0077
NEPEAN TOWNSHIP RF 01(032)	18 442191 5021742 W	1953/03 4216	04 04	FR 0040 FR 0081	008 / 010 008 / 0:20	DO		1505143 () CLAY 0004 BRWN LMSN 0081

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442231 5021657 W	1953/03 4216	04 04	FR 0040 FR 0077	008 / 010 008 / 0:20	DO		1505144 () CLAY 0004 BRWN LMSN 0077
NEPEAN TOWNSHIP RF 01(032)	18 442256 5021612 W	1953/03 4216	04 04	FR 0040 FR 0082	008 / 010 008 / 0:20	DO		1505145 () CLAY 0008 BRWN LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 442206 5021652 W	1953/03 4216	04 04	FR 0040 FR 0089	002 / 003 008 / 0:20	DO		1505146 () CLAY 0008 BRWN LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 442471 5022072 W	1953/03 3504	04 04	FR 0070 FR 0080 FR 0050	012 / 025 004 / 1:0	DO		1505147 () CLAY MSND STNS 0018 ROCK 0080
NEPEAN TOWNSHIP RF 01(032)	18 442406 5021867 W	1953/04 4216	04 04	FR 0040 FR 0096	013 / 016 008 / 0:20	DO		1505148 () CLAY 0018 GREY LMSN 0096
NEPEAN TOWNSHIP RF 01(032)	18 441966 5021752 W	1953/04 4216	04 04	FR 0085 FR 0040	008 / 010 008 / 0:20	DO		1505149 () CLAY 0004 BRWN LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 442531 5022012 W	1953/04 3566	04 04	FR 0095 FR 0040	004 / 008 006 / 1:0	DO		1505150 () CLAY 0010 CLAY MSND STNS 0017 LMSN 0095
NEPEAN TOWNSHIP RF 01(032)	18 441931 5021757 W	1953/04 4216	04 04	FR 0040 FR 0083	013 / 015 008 / 0:20	DO		1505151 () CLAY 0006 BRWN LMSN 0083
NEPEAN TOWNSHIP RF 01(032)	18 442031 5021792 W	1953/04 3566	04 04	FR 0030 FR 0085	005 / 007 006 / 1:0	DO		1505152 () CLAY MSND STNS 0003 LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 442031 5021722 W	1953/04 3601	04 04	FR 0025 FR 0060 FR 0090	003 / 003 003 / 1:0	DO		1505153 () CLAY STNS 0004 LMSN 0070 SNDS LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 442121 5021712 W	1953/04 4216	04 04	FR 0040 FR 0085	002 / 008 / 0:20	DO		1505154 () CLAY 0006 BRWN LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 442181 5021682 W	1953/04 3566	04 04	FR 0025 FR 0086	004 / 006 006 / 0:30	DO		1505155 () CLAY 0004 LMSN 0086

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442011 5021697 W	1953/04 3601	04 04	FR 0070 FR 0091 FR 0040	003 / 003 004 / 1:0	DO		1505156 () CLAY SNDS 0003 LMSN 0070 SNDS LMSN 0091
NEPEAN TOWNSHIP RF 01(032)	18 441951 5021792 W	1953/05 4216	04 04	FR 0082 FR 0040	010 / 012 008 / 0:20	DO		1505157 () CLAY 0006 LMSN 0032 BRWN LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 442056 5021682 W	1953/05 4216	04 04	FR 0040 FR 0086	002 / 003 008 / 0:20	DO		1505158 () CLAY 0006 BRWN LMSN 0086
NEPEAN TOWNSHIP RF 01(032)	18 442121 5021652 W	1953/05 3566	04 04	FR 0025 FR 0083	003 / 004 006 / 0:30	DO		1505159 () CLAY 0004 GRVL STNS 0006 LMSN 0083
NEPEAN TOWNSHIP RF 01(032)	18 442141 5021847 W	1953/05 4216	04 04	FR 0040 FR 0090	013 / 015 008 / 0:20	DO		1505160 () CLAY 0006 BRWN LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 442476 5022032 W	1953/05 3601	04 04	FR 0071	016 / 016 010 / 1:0	DO		1505161 () GREY CLAY 0018 SNDS 0075
NEPEAN TOWNSHIP RF 01(032)	18 442190 5021982 W	1953/06 3113	04 04	FR 0045	012 / 069 / 0:20	DO		1505162 () STNS GRVL 0016 GREY LMSN 0100
NEPEAN TOWNSHIP RF 01(032)	18 441991 5021812 W	1953/05 4216	04 04	FR 0040 FR 0090	013 / 015 008 / 0:20	DO		1505163 () CLAY 0007 LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 441931 5021842 W	1953/05 4216	04 04	FR 0100 FR 0040 FR 0090	013 / 015 008 / 0:20	DO		1505164 () CLAY 0008 LMSN 0100
NEPEAN TOWNSHIP RF 01(032)	18 442256 5021732 W	1953/05 3601	04 04	FR 0075 FR 0055	004 / 004 004 / 1:0	DO		1505165 () CLAY STNS 0005 LMSN 0035 SNDS 0075
NEPEAN TOWNSHIP RF 01(032)	18 441981 5021462 W	1953/05 4216	04 04	FR 0083 FR 0040	010 / 012 008 / 0:20	DO		1505166 () CLAY 0006 LMSN 0083
NEPEAN TOWNSHIP RF 01(032)	18 442011 5021882 W	1953/05 4216	04 04	FR 0040 FR 0085	010 / 012 008 / 0:20	DO		1505167 () CLAY 0008 LMSN 0085

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441991 5021877 W	1953/05 3718	04 04	FR 0096	015 / 030 / :0	DO		1505168 () LMSN 0096
NEPEAN TOWNSHIP RF 01(032)	18 442286 5021797 W	1953/06 4216	04 04	FR 0040 FR 0086	010 / 012 008 / 0:20	DO		1505169 () CLAY 0008 LMSN 0086
NEPEAN TOWNSHIP RF 01(032)	18 442156 5021772 W	1953/06 3566	04 04	FR 0040 FR 0080	009 / 011 007 / 0:30	DO		1505170 () CLAY MSND BLDR 0008 LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 442066 5021722 W	1953/06 3566	04 04	FR 0045 FR 0079	010 / 012 007 / 0:30	DO		1505171 () CLAY MSND BLDR 0010 LMSN 0079
NEPEAN TOWNSHIP RF 01(032)	18 441911 5021642 W	1953/06 3566	04 04	FR 0078 FR 0035	013 / 015 007 / 0:30	DO		1505172 () BLDR 0006 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 441976 5021682 W	1953/07 3601	04 04	FR 0095	015 / 015 010 / 1:0	DO		1505173 () BRWN CLAY 0003 SNDS 0095
NEPEAN TOWNSHIP RF 01(032)	18 442031 5021602 W	1953/07 4216	04 04	FR 0040 FR 0089	010 / 012 008 / 0:20	DO		1505174 () CLAY 0008 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 441796 5021712 W	1953/07 3566	04 04	FR 0114 FR 0070	020 / 032 006 / 1:0	DO		1505175 () BLDR 0003 LMSN 0114
NEPEAN TOWNSHIP RF 01(032)	18 441951 5021672 W	1953/07 3601	04 04	FR 0085	015 / 015 010 / 1:0	DO		1505176 () BRWN CLAY 0003 SNDS 0085
NEPEAN TOWNSHIP RF 01(032)	18 442241 5021897 W	1953/07 3566	04 04	FR 0050 FR 0082	025 / 027 007 / 1:0	DO		1505177 () BLDR 0012 LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 442101 5021702 W	1953/07 3566	04 04	FR 0025 FR 0055	015 / 016 007 / 0:30	DO		1505178 () BLDR 0007 LMSN 0055
NEPEAN TOWNSHIP RF 01(032)	18 441871 5021812 W	1953/08 3113	04 04	FR 0055	030 / 032 002 / 0:30	DO		1505179 () RED CLAY 0014 GRVL 0016 LMSN 0100

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441821 5021722 W	1953/08 3566	04 04	FR 0095 FR 0121	016 / 030 005 / 0:30	DO		1505180 () BLDR 0003 LMSN 0121
NEPEAN TOWNSHIP RF 01(032)	18 441771 5021702 W	1953/09 3566	04 04	FR 0104 FR 0085	017 / 020 006 / 0:30	DO		1505181 () CLAY HPAN 0004 LMSN 0104
NEPEAN TOWNSHIP RF 01(032)	18 442561 5022062 W	1953/09 3566	04 04	FR 0050 FR 0087	012 / 014 006 / 0:30	DO		1505182 () CLAY 0010 HPAN 0015 LMSN 0070 SNDS 0087
NEPEAN TOWNSHIP RF 01(032)	18 441906 5021712 W	1953/10 3566	04 04	FR 0115 FR 0095	019 / 035 006 / 1:0	DO		1505183 () HPAN 0009 LMSN 0102 SNDS 0115
NEPEAN TOWNSHIP RF 01(032)	18 441771 5021772 W	1953/11 4216	04 04	FR 0107 FR 0060	022 / 030 008 / 1:0	DO		1505184 () CLAY 0004 LMSN 0107
NEPEAN TOWNSHIP RF 01(032)	18 441801 5021662 W	1953/11 3566	04 04 04	FR 0060 FR 0083	020 / 023 006 / 1:0	DO		1505185 () FILL 0005 LMSN 0080 BLCK SHLE SNDS 0085
NEPEAN TOWNSHIP RF 01(032)	18 441746 5021742 W	1954/01 4216	05 05	FR 0060 FR 0107	022 / 030 008 / 0:20	DO		1505186 () LOAM 0006 LMSN 0107
NEPEAN TOWNSHIP RF 01(032)	18 442606 5021962 W	1954/03 4216	04 04	FR 0105 FR 0060	022 / 027 006 / 0:20	DO		1505187 () CLAY 0022 HPAN 0026 LMSN 0105
NEPEAN TOWNSHIP RF 01(032)	18 442186 5021872 W	1954/05 4216	05 05	FR 0040 FR 0097	017 / 022 006 / 0:30	DO		1505188 () CLAY 0012 LMSN 0097
NEPEAN TOWNSHIP RF 01(032)	18 442171 5021912 W	1954/05 3566	05 05	FR 0060 FR 0080	022 / 026 008 / 1:0	DO		1505189 () CLAY BLDR 0009 LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 441891 5021532 W	1954/05 4216	08 08	FR 0090 FR 0060	017 / 020 006 / 1:0	DO		1505190 () CLAY 0006 LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 442101 5021752 W	1954/05 3566	05 05	FR 0050 FR 0070	015 / 015 008 / 1:0	DO		1505191 () CLAY STNS 0009 LMSN 0075

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441846 5021562 W	1954/06 3114	04 04	FR 0079	018 / 018 004 / 0:30	DO		1505192 () CLAY 0005 LMSN 0078 UNKN UNKN UNKN 0079
NEPEAN TOWNSHIP RF 01(032)	18 441871 5021522 W	1954/06 3114	04 04	FR 0082	013 / 013 004 / 0:30	DO		1505193 () CLAY 0005 LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 441851 5021607 W	1954/07 3114	04 04	FR 0078	018 / 005 / 0:30	DO		1505194 () CLAY 0008 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 441956 5021622 W	1954/07 3566	04 04	FR 0073 FR 0035	018 / 024 004 / :0	DO		1505195 () CLAY MSND STNS 0004 LMSN 0073
NEPEAN TOWNSHIP RF 01(032)	18 441886 5021632 W	1954/08 4216	04 04	FR 0057 FR 0040	017 / 022 006 / 0:30	DO		1505196 () CLAY 0006 SNDS 0057
NEPEAN TOWNSHIP RF 01(032)	18 442096 5021832 W	1954/08 3566	04 04	FR 0035 FR 0071	016 / 024 004 / 0:30	DO		1505197 () CLAY MSND STNS 0004 LMSN 0071
NEPEAN TOWNSHIP RF 01(032)	18 442066 5021812 W	1954/08 3566	04 04	FR 0065 FR 0071	016 / 024 004 / 0:30	DO		1505198 () CLAY MSND STNS 0012 LMSN 0071
NEPEAN TOWNSHIP RF 01(032)	18 441931 5021697 W	1954/08 4216	05 05	FR 0060	017 / 022 006 / 1:0	DO		1505199 () CLAY 0006 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 441931 5021752 W	1954/08 3114	04 04	FR 0084	017 / 017 005 / 0:30	DO		1505200 () CLAY 0007 LMSN 0086
NEPEAN TOWNSHIP RF 01(032)	18 441911 5021822 W	1954/08 3114	04 04	FR 0107	022 / 005 / 0:30	DO		1505201 () CLAY 0012 LMSN 0109
NEPEAN TOWNSHIP RF 01(032)	18 442231 5021762 W	1954/08 3566	04 04	FR 0050 FR 0070	017 / 017 006 / 1:0	DO		1505202 () CLAY 0002 LMSN 0072
NEPEAN TOWNSHIP RF 01(032)	18 441806 5021662 W	1954/08 3566	04 04	FR 0110 FR 0070	025 / 034 007 / 1:0	DO		1505203 () CLAY LOAM 0005 BLUE LMSN 0115

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441901 5021532 W	1954/09 4216	04 04	FR 0060	017 / 022 006 / 1:0	DO		1505204 () CLAY 0010 LMSN 0084
NEPEAN TOWNSHIP RF 01(032)	18 442241 5021822 W	1954/09 3566	04 04	FR 0068 FR 0045	013 / 014 006 / 1:0	DO		1505205 () CLAY STNS 0005 LMSN 0071
NEPEAN TOWNSHIP RF 01(032)	18 442031 5021612 W	1954/09 3114	04 04	FR 0064	015 / 005 / 0:30	DO		1505206 () CLAY 0012 LMSN 0066
NEPEAN TOWNSHIP RF 01(032)	18 441611 5021612 W	1954/09 3566	04 04	FR 0075	018 / 018 005 / 0:30	DO		1505207 () LOAM MSND 0003 LMSN 0075
NEPEAN TOWNSHIP RF 01(032)	18 441561 5021582 W	1954/09 3566	04 04	FR 0065	009 / 014 005 / 0:30	DO		1505208 () LOAM MSND 0004 LMSN 0065
NEPEAN TOWNSHIP RF 01(032)	18 441811 5021542 W	1954/09 3114	04 04	FR 0074	017 / 005 / 0:30	DO		1505209 () CLAY 0004 LMSN 0074
NEPEAN TOWNSHIP RF 01(032)	18 441851 5021802 W	1954/09 4216	05 05	FR 0080	017 / 022 006 / 1:0	DO		1505210 () CLAY 0008 LMSN 0103
NEPEAN TOWNSHIP RF 01(032)	18 441551 5021572 W	1954/09 3566	04 04	FR 0067	014 / 014 005 / 0:30	DO		1505211 () LOAM MSND 0008 LMSN 0067
NEPEAN TOWNSHIP RF 01(032)	18 441836 5021497 W	1954/10 3114	04 04	FR 0070	008 / 005 / 0:30	DO		1505212 () CLAY 0013 LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 441501 5021542 W	1954/10 3566	04 04	FR 0069	010 / 014 005 / 0:30	DO		1505213 () LOAM MSND 0010 LMSN 0069
NEPEAN TOWNSHIP RF 01(032)	18 441741 5021502 W	1954/10 3566	04 04	FR 0069	008 / 012 005 / 0:30	DO		1505214 () LOAM MSND 0012 LMSN 0064 UNKN UNKN UNKN 0069
NEPEAN TOWNSHIP RF 01(032)	18 441711 5021727 W	1954/10 4216	05 05	FR 0080 FR 0103	012 / 015 006 / 1:0	DO		1505215 () CLAY 0006 LMSN 0103

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441661 5021697 W	1954/11 4216	05 05	FR 0060	004 / 015 006 / 1:0	DO		1505216 () CLAY 0012 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 441881 5021577 W	1954/11 3566	04 04	FR 0065 FR 0040	013 / 013 010 / 1:0	DO		1505217 () CLAY MSND 0015 BLCK LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 441631 5021617 W	1954/11 3718	04 04	FR 0036	007 / 010 005 / 1:0	DO		1505218 () CLAY 0005 LMSN 0036 LMSN SHLE 0043 SNDS 0082 LMSN SHLE 0104
NEPEAN TOWNSHIP RF 01(032)	18 441641 5021572 W	1954/11 4216	06 06	FR 0040	004 / 015 006 / 1:0	DO		1505219 () CLAY 0010 LMSN 0091
NEPEAN TOWNSHIP RF 01(032)	18 441531 5021622 W	1954/11 4216	06 06	FR 0040	004 / 006 006 / 1:0	DO		1505220 () CLAY 0010 LMSN 0100
NEPEAN TOWNSHIP RF 01(032)	18 441641 5021397 W	1954/11 3566	04 04	FR 0079	004 / 006 005 / 0:30	DO		1505221 () LOAM MSND 0002 SILT BLDR 0040 FSND 0063 LMSN 0079
NEPEAN TOWNSHIP RF 01(032)	18 441491 5021612 W	1954/12 4216	06 06	FR 0040	002 / 004 006 / 1:0	DO		1505222 () CLAY 0010 LMSN 0092
NEPEAN TOWNSHIP RF 01(032)	18 441806 5021577 W	1954/12 3114	04 04	FR 0088	012 / 014 005 / 0:30	DO		1505223 () CLAY 0007 LMSN 0088
NEPEAN TOWNSHIP RF 01(032)	18 441616 5021337 W	1954/12 3566	04 04	FR 0070 FR 0050	008 / 012 005 / 0:30	DO		1505224 () LOAM MSND 0002 SILT BLDR 0035 FSND 0038 LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 441591 5021322 W	1954/12 3566	04 04	FR 0050 FR 0070	008 / 012 005 / 0:30	DO		1505225 () LOAM MSND 0002 SILT BLDR 0035 FSND 0038 LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 440941 5020907 W	1956/06 3701	05 05	FR 0107 FR 0074	004 / 006 004 / 1:0	DO		1505226 () CLAY 0033 SILT 0058 MSND 0060 GREY LMSN 0107
NEPEAN TOWNSHIP RF 01(032)	18 441366 5021127 W	1956/03 3701	06 06	FR 0110 FR 0172 FR 0150	001 / 012 002 / 72:0	NU		1505227 () CLAY 0030 BLDR 0042 MSND 0092 GREY LMSN 0172

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442261 5021612 W	1955/07 3701	05 05	FR 0080 FR 0093	010 / 025 004 / 1:0	DO		1505228 () SILT 0004 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 441786 5021572 W	1955/04 4216	04 04	FR 0040	010 / 012 006 / 0:30	DO		1505229 () CLAY MSND 0010 LMSN 0097
NEPEAN TOWNSHIP RF 01(032)	18 441531 5021442 W	1955/01 4216	05 05	FR 0035 FR 0060	003 / 005 006 / 0:30	DO		1505230 () BLDR MSND CLAY 0020 LMSN 0081
NEPEAN TOWNSHIP RF 01(032)	18 441676 5021472 W	1955/01 3323	05 05	FR 0078 FR 0050	011 / 011 008 / 1:0	DO		1505231 () CLAY STNS 0009 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 441561 5021452 W	1955/01 4216	04 04	FR 0060 FR 0035	003 / 005 006 / 0:30	DO		1505232 () BLDR CLAY MSND 0020 LMSN 0084
NEPEAN TOWNSHIP RF 01(032)	18 442066 5021857 W	1955/01 3566	05 05	FR 0065 FR 0035 FR 0050	020 / 025 010 / 1:0	DO		1505233 () BLCK CLAY MSND STNS 0005 BLUE LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 441591 5021472 W	1955/02 4216	05 05	FR 0035 FR 0060	003 / 005 006 / 0:30	DO		1505234 () BLDR CLAY MSND 0020 LMSN 0084
NEPEAN TOWNSHIP RF 01(032)	18 441651 5021462 W	1955/02 3323	05 05	FR 0050 FR 0078	006 / 006 008 / 1:0	DO		1505235 () CLAY STNS 0013 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 441616 5021482 W	1955/02 4216	05 05	FR 0035 FR 0060	003 / 005 006 / 0:30	DO		1505236 () BLDR CLAY MSND 0020 LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 441646 5021502 W	1955/02 4216	05 05	FR 0035	005 / 008 006 / 0:30	DO		1505237 () BLDR CLAY MSND 0012 LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 441496 5021502 W	1955/03 4216	05 05	FR 0035 FR 0075	/ 003 006 / 0:30	DO		1505238 () CLAY BLDR MSND 0012 LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 441531 5021522 W	1955/03 4216	05 05	FR 0035	001 / 003 006 / 0:30	DO		1505239 () CLAY BLDR MSND 0012 LMSN 0085

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441561 5021532 W	1955/03 4216	05 05	FR 0035	004 / 007 006 / 0:30	DO		1505240 () CLAY MSND 0010 LMSN 0087
NEPEAN TOWNSHIP RF 01(032)	18 441586 5021542 W	1955/03 4216	05 05	FR 0035	004 / 007 006 / 0:30	DO		1505241 () CLAY MSND 0010 LMSN 0087
NEPEAN TOWNSHIP RF 01(032)	18 441431 5021552 W	1955/03 3701	05 05	FR 0091 FR 0080 FR 0060	001 / 020 009 / 2:0	DO		1505242 () CLAY 0008 BLDR 0012 LMSN 0091
NEPEAN TOWNSHIP RF 01(032)	18 441651 5021582 W	1955/03 4216	05 05	FR 0035 FR 0040	010 / 012 006 / 0:30	DO		1505243 () CLAY MSND 0010 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 441776 5021472 W	1955/03 3566	04 04	FR 0073 FR 0077	015 / 015 010 / 1:0	DO		1505244 () MSND BLDR 0030 MSND GRVL 0035 HPAN BLDR 0058 BLUE LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 441616 5021562 W	1955/03 4216	05 05	FR 0035 FR 0040	010 / 012 006 / 0:30	DO		1505245 () CLAY MSND 0010 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 441671 5021597 W	1955/04 4216	05 05	FR 0040	010 / 013 006 / 0:30	DO		1505246 () CLAY MSND 0010 LMSN 0100
NEPEAN TOWNSHIP RF 01(032)	18 441706 5021527 W	1955/04 4216	05 05	FR 0040	010 / 013 006 / 0:30	DO		1505247 () CLAY MSND 0008 LMSN 0083
NEPEAN TOWNSHIP RF 01(032)	18 441731 5021542 W	1955/04 4216	05 05	FR 0040	008 / 010 006 / 0:30	DO		1505248 () CLAY MSND 0010 LMSN 0092
NEPEAN TOWNSHIP RF 01(032)	18 442076 5021802 W	1955/04 3566	05 05	FR 0050 FR 0077	009 / 010 010 / 1:0	DO		1505249 () CLAY ROCK MSND 0007 BLUE LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 441756 5021562 W	1955/04 4216	05 05	FR 0040	010 / 012 006 / 0:30	DO		1505250 () CLAY MSND 0008 LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 441666 5021512 W	1955/04 4216	05 05	FR 0040	010 / 012 006 / 0:30	DO		1505251 () CLAY MSND 0012 LMSN 0095

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442161 5021672 W	1955/05 4216	04 04	FR 0040	010 / 012 006 / 1:0	DO		1505252 () CLAY 0010 LMSN 0095
NEPEAN TOWNSHIP RF 01(032)	18 441411 5021572 W	1955/05 3701	05 05	FR 0070 FR 0091	001 / 030 003 / 2:0	DO		1505253 () SILT 0006 HPAN BLDR 0011 LMSN 0091
NEPEAN TOWNSHIP RF 01(032)	18 441781 5021432 W	1955/05 3566	05 05	FR 0045 FR 0065	008 / 008 010 / 1:0	DO		1505254 () CLAY BLDR MSND 0020 MSND CLAY 0035 FSND 0037 BLUE LMSN 0050 GREY LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 441821 5021447 W	1955/05 3566	05 05	FR 0045 FR 0060	010 / 010 010 / 1:0	DO		1505255 () FILL 0005 CLAY BLDR MSND 0025 MSND 0029 BLUE LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 441586 5021592 W	1955/05 4216	04 04	FR 0040	008 / 010 006 / 1:0	DO		1505256 () CLAY 0008 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 442086 5021637 W	1955/05 3566	05 05	FR 0040 FR 0065	012 / 012 010 / 1:0	DO		1505257 () FILL 0004 BLUE LMSN 0075
NEPEAN TOWNSHIP RF 01(032)	18 442056 5021627 W	1955/06 3566	05 05	FR 0040 FR 0070	012 / 012 010 / 1:0	DO		1505258 () FILL 0005 BLUE LMSN 0075
NEPEAN TOWNSHIP RF 01(032)	18 442156 5021622 W	1955/06 3701	05 05	FR 0060	015 / 040 003 / 1:0	DO		1505259 () SILT 0005 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 442011 5021552 W	1955/06 3323	04 04	FR 0089 FR 0050	010 / 010 008 / 1:0	DO		1505260 () MSND BLDR 0012 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 442276 5021797 W	1955/06 3566	05 05	FR 0074 FR 0065 FR 0045	021 / 021 010 / 1:0	DO		1505261 () FILL 0005 BLUE LMSN 0018 BRWN LMSN 0040 BLUE LMSN 0075
NEPEAN TOWNSHIP RF 01(032)	18 441616 5021672 W	1955/06 4216	04 04	FR 0040	012 / 014 006 / 0:30	DO		1505262 () CLAY 0008 LMSN 0082
NEPEAN TOWNSHIP RF 01(032)	18 441976 5021532 W	1955/06 3323	04 04	FR 0050	010 / 012 008 / 1:0	DO		1505263 () MSND STNS 0010 LMSN 0094

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441951 5021517 W	1955/06 3323	04 04	FR 0050 FR 0093	010 / 012 008 / 1:0	DO		1505264 () MSND STNS 0012 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 441856 5021472 W	1955/06 3566	05 05	FR 0056 FR 0048	012 / 012 010 / 1:0	DO		1505265 () FILL 0005 CLAY MSND BLDR 0017 BRWN LMSN 0035 BLUE LMSN 0075
NEPEAN TOWNSHIP RF 01(032)	18 441641 5021242 W	1955/06 4216	05	FR 0070	006 / 012 006 / 0:30	DO		1505266 () CLAY 0068 GRVL 0070
NEPEAN TOWNSHIP RF 01(032)	18 441701 5021312 W	1955/07 3701	05 05	FR 0083 FR 0070	008 / 025 006 / 1:0	DO		1505267 () CLAY 0025 MSND 0055 LMSN 0083
NEPEAN TOWNSHIP RF 01(032)	18 442246 5021952 W	1955/07 3323	04 04	FR 0085 FR 0105	016 / 030 008 / 1:0	DO		1505268 () CLAY STNS 0018 LMSN 0132
NEPEAN TOWNSHIP RF 01(032)	18 441911 5021497 W	1955/07 3323	04 04	FR 0090 FR 0050	015 / 018 008 / 1:0	DO		1505269 () CLAY STNS 0018 LMSN 0094
NEPEAN TOWNSHIP RF 01(032)	18 441411 5021292 W	1955/07 4216	04 04	FR 0100 FR 0080	018 / 115 001 / 0:15	DO		1505270 () CLAY 0038 BLDR 0040 MSND 0080 SNDS 0115
NEPEAN TOWNSHIP RF 01(032)	18 441766 5021762 W	1955/07 3323	04 04	FR 0065 FR 0100	012 / 018 008 / 1:0	DO		1505271 () CLAY STNS 0017 LMSN 0115
NEPEAN TOWNSHIP RF 01(032)	18 441966 5021472 W	1955/08 3323	04 04	FR 0090 FR 0050	012 / 017 008 / 1:0	DO		1505272 () CLAY STNS 0022 LMSN 0091
NEPEAN TOWNSHIP RF 01(032)	18 442241 5021602 W	1955/08 3701	05 05	FR 0093	009 / 020 005 / 1:0	DO		1505273 () CLAY 0005 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 441951 5021442 W	1955/08 3323	05 05	FR 0090 FR 0050	018 / 020 008 / 1:0	DO		1505274 () CLAY STNS 0030 MSND GRVL 0045 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 441931 5021482 W	1955/08 3323	04 04	FR 0095 FR 0050	012 / 015 008 / 1:0	DO		1505275 () CLAY STNS 0015 LMSN 0097

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE [2] CNTR [3]	CASING DIA [4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442196 5021572 W	1955/08 3701	05 05	FR 0091	009 / 025 006 / 1:0	DO		1505276 () CLAY 0004 LMSN 0091
NEPEAN TOWNSHIP RF 01(032)	18 441731 5021327 W	1955/08 3701	05 05	FR 0080	008 / 020 006 / 1:0	DO		1505277 () CLAY 0025 MSND 0064 LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 441741 5021407 W	1955/08 3718	06 06	FR 0070	010 / 015 007 / 1:0	DO		1505278 () CLAY 0045 GREY LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 441951 5021442 W	1955/09 3323	04 04	FR 0090 FR 0050	015 / 018 008 / 1:0	DO		1505279 () CLAY STNS 0029 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 441456 5021482 W	1955/09 4216	05 05	FR 0050	006 / 010 006 / 0:30	DO		1505280 () CLAY 0015 LMSN 0104
NEPEAN TOWNSHIP RF 01(032)	18 441841 5021382 W	1955/09 3323	04 04	FR 0075 FR 0060	012 / 015 008 / 1:0	DO		1505281 () CLAY STNS 0030 MSND GRVL 0050 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 441681 5021302 W	1955/09 3701	05 05	FR 0098	009 / 025 006 / 1:0	DO		1505282 () CLAY 0025 MSND 0070 LMSN 0098
NEPEAN TOWNSHIP RF 01(032)	18 441761 5021347 W	1955/09 3701	05 05	FR 0094	009 / 025 005 / 1:0	DO		1505283 () CLAY 0025 MSND 0074 LMSN 0094
NEPEAN TOWNSHIP RF 01(032)	18 441346 5021422 W	1955/09 4216	05 05	FR 0040	005 / 007 006 / 0:30	DO		1505284 () CLAY 0020 LMSN 0111
NEPEAN TOWNSHIP RF 01(032)	18 441956 5021492 W	1955/09 3323	04 04	FR 0065 FR 0090	010 / 014 008 / 1:0	DO		1505285 () CLAY STNS 0018 LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 441816 5021372 W	1955/09 3323	04 04	FR 0060 FR 0071	012 / 015 008 / 1:0	DO		1505286 () CLAY STNS 0035 MSND GRVL 0051 LMSN 0072
NEPEAN TOWNSHIP RF 01(032)	18 441701 5021612 W	1955/09 4216	04 04	FR 0040	010 / 012 006 / :0	DO		1505287 () CLAY 0012 LMSN 0085

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442081 5021517 W	1955/10 3323	04 04	FR 0065 FR 0075	015 / 018 008 / 1:0	DO		1505288 () CLAY STNS 0015 LMSN 0077
NEPEAN TOWNSHIP RF 01(032)	18 441961 5021487 W	1955/10 3323	04 04	FR 0075 FR 0090	010 / 013 008 / 1:0	DO		1505289 () CLAY STNS 0019 LMSN 0090
NEPEAN TOWNSHIP RF 01(032)	18 441441 5021512 W	1955/10 4216	05 05	FR 0040	004 / 005 006 / 0:30	DO		1505290 () CLAY 0010 LMSN 0106
NEPEAN TOWNSHIP RF 01(032)	18 442066 5021507 W	1955/10 3323	04 04	FR 0075 FR 0085	015 / 017 008 / 1:0	DO		1505291 () CLAY STNS 0018 LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 442066 5021512 W	1955/10 3323	04 04	FR 0075 FR 0085	010 / 014 008 / 1:0	DO		1505292 () CLAY STNS 0019 LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 441476 5021312 W	1955/10 4216	05 04 04	FR 0065	005 / 007 006 / 0:30	DO		1505293 () CLAY 0065 MSND 0067 LMSN 0105
NEPEAN TOWNSHIP RF 01(032)	18 441521 5021332 W	1956/02 1603	04	FR 0093	003 / 008 010 / 3:0	DO		1505294 () CLAY 0028 MSND 0060 GRVL BLDR 0093
NEPEAN TOWNSHIP RF 01(032)	18 441406 5021372 W	1955/10 4216	05 05	FR 0040	005 / 007 006 / 0:30	DO		1505295 () CLAY 0025 LMSN 0112
NEPEAN TOWNSHIP RF 01(032)	18 441261 5021232 W	1955/11 4216	05 05	FR 0058	001 / 006 006 / 0:30	DO		1505296 () CLAY 0056 MSND 0058 LMSN 0103
NEPEAN TOWNSHIP RF 01(032)	18 441371 5021402 W	1955/11 4216	05 05	FR 0040 FR 0102	/ 001 006 / 0:30	DO		1505297 () CLAY 0028 LMSN 0102
NEPEAN TOWNSHIP RF 01(032)	18 441431 5021222 W	1955/11 3323	05 05	FR 0115	004 / 015 008 / 1:0	DO		1505298 () BLUE CLAY 0035 MSND GRVL 0099 LMSN 0146
NEPEAN TOWNSHIP RF 01(032)	18 440981 5020972 W	1955/11 4216	04 04 05	FR 0058	003 / 005 006 / 0:30	DO		1505299 () CLAY 0058 MSND 0060 LMSN 0104

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441201 5021082 W	1955/11 4216	05 05	FR 0067	005 / 007 006 / 0:30	DO		1505300 () CLAY 0067 LMSN 0098
NEPEAN TOWNSHIP RF 01(032)	18 441231 5021062 W	1955/11 3323	05 05	FR 0105 FR 0147	005 / 007 008 / 2:0	DO		1505301 () CLAY 0040 MSND GRVL 0092 LMSN 0147
NEPEAN TOWNSHIP RF 01(032)	18 441241 5021292 W	1955/11 4216	05 05	FR 0046	003 / 005 006 / 0:30	DO		1505302 () CLAY 0046 LMSN 0108
NEPEAN TOWNSHIP RF 01(032)	18 441446 5021327 W	1955/11 4216	05 05	FR 0078	003 / 005 006 / 0:30	DO		1505303 () CLAY 0078 LMSN 0106
NEPEAN TOWNSHIP RF 01(032)	18 441796 5021362 W	1955/11 3323	05 05	FR 0073	009 / 017 008 / 1:0	DO		1505304 () CLAY STNS 0030 MSND GRVL 0065 LMSN 0073
NEPEAN TOWNSHIP RF 01(032)	18 441241 5021292 W	1955/12 4216	05 04 04	FR 0098	010 / 015 006 / 0:30	DO		1505305 () CLAY 0098 MSND 0100 LMSN 0123
NEPEAN TOWNSHIP RF 01(032)	18 441136 5021002 W	1955/12 3323	05 05	FR 0100 FR 0126	007 / 017 008 / 1:0	DO		1505306 () CLAY 0040 MSND GRVL 0081 LMSN 0126
NEPEAN TOWNSHIP RF 01(032)	18 441626 5021272 W	1955/12 3323	05 05	FR 0090 FR 0113	-003 / 005 008 / 3:0	DO		1505307 () CLAY 0040 MSND GRVL 0075 MSND GRVL 0113
NEPEAN TOWNSHIP RF 01(032)	18 441146 5021052 W	1955/12 4216	05 04 04	FR 0061	003 / 005 006 / 0:30	DO		1505308 () CLAY 0061 MSND 0063 LMSN 0123
NEPEAN TOWNSHIP RF 01(032)	18 441031 5020997 W	1955/12 4216	05 04 04	FR 0056	003 / 005 006 / 0:30	DO		1505309 () CLAY 0056 GRVL 0060 LMSN 0125
NEPEAN TOWNSHIP RF 01(032)	18 441221 5021092 W	1955/12 3323	05 05	FR 0110 FR 0130	003 / 006 008 / 2:0	DO		1505310 () CLAY 0035 MSND GRVL 0096 LMSN 0130
NEPEAN TOWNSHIP RF 01(032)	18 441431 5021342 W	1955/12 4216	05 05	FR 0050	003 / 005 006 / 0:30	DO		1505311 () CLAY 0050 GRVL 0051 LMSN 0113

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 442101 5021602 W	1956/01 3701	04 04	FR 0080 FR 0070	012 / 035 003 / 1:0	DO		1505312 () SILT 0007 GREY LMSN 0080
NEPEAN TOWNSHIP RF 01(032)	18 441391 5021187 W	1956/01 3323	05 05	FR 0160 FR 0172	005 / 040 008 / 1:0	DO		1505313 () CLAY 0070 MSND GRVL 0095 LMSN 0172
NEPEAN TOWNSHIP RF 01(032)	18 442031 5021492 W	1956/01 3701	05 05	FR 0070 FR 0089	012 / 030 003 / 1:0	DO		1505314 () SILT 0004 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 441241 5021062 W	1956/01 3323	05 05	FR 0130	005 / 007 008 / 3:0	DO		1505315 () CLAY 0090 MSND GRVL 0096 LMSN 0130
NEPEAN TOWNSHIP RF 01(032)	18 441386 5021482 W	1956/01 3701	05 05	FR 0050 FR 0078	002 / 030 003 / 1:0	DO		1505316 () CLAY 0007 HPAN BLDR 0015 LMSN 0078
NEPEAN TOWNSHIP RF 01(032)	18 441796 5021317 W	1956/01 3701	05 05	FR 0070 FR 0087	010 / 040 003 / 1:0	DO		1505317 () CLAY 0020 BLDR MSND 0058 GREY LMSN 0087
NEPEAN TOWNSHIP RF 01(032)	18 441281 5021362 W	1956/01 4216	05 05	FR 0040	002 / 005 006 / 0:30	DO		1505318 () CLAY 0029 GRVL 0031 LMSN 0117
NEPEAN TOWNSHIP RF 01(032)	18 441191 5021032 W	1956/01 3323	05 05	FR 0095 FR 0115	009 / 009 008 / 2:0	DO		1505319 () CLAY 0070 MSND GRVL 0083 LMSN 0120
NEPEAN TOWNSHIP RF 01(032)	18 442021 5021482 W	1956/01 3701	05 05	FR 0070 FR 0089	010 / 025 003 / 1:0	DO		1505320 () SILT 0006 LMSN 0089
NEPEAN TOWNSHIP RF 01(032)	18 442031 5021567 W	1956/01 3701	04 04	FR 0085 FR 0050	015 / 030 003 / 1:0	DO		1505321 () SILT 0010 GREY LMSN 0085
NEPEAN TOWNSHIP RF 01(032)	18 441211 5021322 W	1956/01 4216	05 05	FR 0040	003 / 005 006 / 0:30	DO		1505322 () CLAY 0032 GRVL 0035 LMSN 0118
NEPEAN TOWNSHIP RF 01(032)	18 441661 5021287 W	1956/01 3701	04 04	FR 0090 FR 0107	004 / 025 004 / 1:0	DO		1505323 () CLAY 0040 MSND GRVL BLDR 0075 LMSN 0107

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE [2] CNTR [3]	CASING DIA [4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441271 5021077 W	1956/02 3323	05 05	FR 0140 FR 0120	006 / 006 008 / 3:0	DO		1505324 () CLAY STNS 0090 MSND GRVL 0107 LMSN 0140
NEPEAN TOWNSHIP RF 01(032)	18 441391 5021557 W	1956/02 4216	05 05	FR 0040	003 / 005 006 / 0:30	DO		1505325 () CLAY 0018 LMSN 0112
NEPEAN TOWNSHIP RF 01(032)	18 441306 5021092 W	1956/02 3323	05	FR 0124	006 / 030 008 / 1:0	DO		1505326 () CLAY 0075 MSND GRVL 0124
NEPEAN TOWNSHIP RF 01(032)	18 441156 5021292 W	1956/02 4216	05 05	FR 0040	005 / 007 006 / 0:30	DO		1505327 () CLAY 0035 GRVL 0038 LMSN 0116
NEPEAN TOWNSHIP RF 01(032)	18 441436 5021252 W	1956/02 4216	04 05 04	FR 0040	005 / 007 006 / 0:30	DO		1505328 () CLAY 0065 MSND 0074 LMSN 0100
NEPEAN TOWNSHIP RF 01(032)	18 441716 5021317 W	1956/02 3701	05 05	FR 0090 FR 0106	012 / 025 003 / 1:0	DO		1505329 () SILT 0020 MSND 0060 HPAN 0065 LMSN 0106
NEPEAN TOWNSHIP RF 01(032)	18 441076 5020972 W	1956/02 3323	04 04	FR 0100 FR 0125	005 / 005 008 / 1:0	DO		1505330 () CLAY 0065 MSND GRVL 0078 LMSN 0131
NEPEAN TOWNSHIP RF 01(032)	18 442101 5021532 W	1956/02 3701	05 05	FR 0078 FR 0080	015 / 030 003 / 1:0	DO		1505331 () SILT 0004 LMSN 0093
NEPEAN TOWNSHIP RF 01(032)	18 441341 5021292 W	1956/03 4216	04 04 05	FR 0040	003 / 005 006 / 0:30	DO		1505332 () CLAY 0055 MSND 0057 LMSN 0115
NEPEAN TOWNSHIP RF 01(032)	18 441376 5021272 W	1956/03 4216	05 04 04	FR 0040	020 / 040 003 / 0:15	DO		1505333 () CLAY 0080 GRVL MSND 0083 LMSN 0084
NEPEAN TOWNSHIP RF 01(032)	18 441011 5020942 W	1956/04 3701	05 05	FR 0075 FR 0124	005 / 010 004 / 1:0	DO		1505334 () CLAY 0032 SILT 0059 GREY LMSN 0124
NEPEAN TOWNSHIP RF 01(032)	18 441291 5021222 W	1956/04 4216	05 05	FR 0040	005 / 007 006 / 0:30	DO		1505335 () CLAY 0080 MSND GRVL 0085 LMSN 0103

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441361 5021262 W	1956/04 4833	05 05	FR 0070	010 / 025 005 / 0:15	DO		1505336 () CLAY HPAN 0072 GREY LMSN 0076
NEPEAN TOWNSHIP RF 01(032)	18 441011 5020942 W	1956/04 3701	04 04	FR 0113 FR 0075	005 / 010 004 / 1:0	DO		1505337 () CLAY 0035 SILT 0060 GREY LMSN 0113
NEPEAN TOWNSHIP RF 01(032)	18 441256 5021112 W	1956/04 4216	05 05	FR 0098	003 / 005 006 / 0:30	DO		1505338 () CLAY 0035 GRVL 0045 CLAY 0094 MSND 0098 LMSN 0127
NEPEAN TOWNSHIP RF 01(032)	18 441076 5020972 W	1956/05 4216	05 04 04	FR 0050	004 / 007 006 / 0:30	DO		1505339 () CLAY 0046 MSND 0050 LMSN 0132
NEPEAN TOWNSHIP RF 01(032)	18 441681 5021472 W	1956/05 1603	04 04	FR 0094	/ 004 010 / 4:0	DO		1505340 () CLAY 0030 MSND 0060 GRVL BLDR 0081 LMSN 0094
NEPEAN TOWNSHIP RF 01(032)	18 441716 5021622 W	1956/05 4833	04 04	FR 0065	008 / 030 005 / 0:15	DO		1505341 () LOAM 0003 LMSN 0070
NEPEAN TOWNSHIP RF 01(032)	18 441736 5021507 W	1956/05 1603	04 04	FR 0092	/ 004 010 / 4:0	DO		1505342 () BLUE CLAY 0030 YLLW MSND 0060 GRVL 0072 BLCK LMSN 0092
NEPEAN TOWNSHIP RF 01(032)	18 440961 5020922 W	1956/06 3701	05 05	FR 0071 FR 0107	006 / 008 004 / 1:0	DO		1505343 () CLAY 0034 SILT 0060 MSND 0063 GREY LMSN 0107
NEPEAN TOWNSHIP RF 01(032)	18 441291 5021267 W	1956/06 4216	05	FR 0053	005 / 007 006 / 0:30	DO		1505344 () CLAY 0053
NEPEAN TOWNSHIP RF 01(032)	18 440921 5020942 W	1956/06 4216	05 04 04	FR 0055	005 / 007 006 / 0:30	DO		1505345 () CLAY 0053 MSND 0055 LMSN 0120
NEPEAN TOWNSHIP RF 01(032)	18 441291 5021132 W	1956/07 4216	04 05 04	FR 0096 FR 0185	015 / 020 006 / 0:30	DO		1505346 () CLAY 0056 CLAY MSND 0096 GREY LMSN 0180 BRWN LMSN 0185
NEPEAN TOWNSHIP RF 01(032)	18 441381 5021482 W	1956/07 4216	05 05	FR 0040	003 / 005 006 / 0:30	DO		1505347 () CLAY 0018 LMSN 0095

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441141 5021222 W	1956/07 3701	04 04	FR 0080 FR 0091	008 / 012 003 / 1:0	DO		1505348 () CLAY 0012 GREY LMSN 0091
NEPEAN TOWNSHIP RF 01(032)	18 441321 5021342 W	1956/07 4216	05 05	FR 0040	002 / 003 006 / 0:30	DO		1505349 () CLAY 0036 LMSN 0123
NEPEAN TOWNSHIP RF 01(032)	18 441401 5021152 W	1956/07 3701	05 05	FR 0120	004 / 004 003 / 2:0	DO		1505350 () CLAY 0030 BLDR 0040 MSND 0096 GREY LMSN 0120
NEPEAN TOWNSHIP RF 01(032)	18 441771 5021642 W	1956/07 3701	05 05	FR 0090 FR 0110 FR 0124	014 / 050 004 / 1:0	DO		1505351 () SILT 0004 LMSN 0124
NEPEAN TOWNSHIP RF 01(032)	18 441376 5021442 W	1956/08 4216	05 05	FR 0040	003 / 005 006 / 0:30	DO		1505352 () CLAY 0020 LMSN 0110
NEPEAN TOWNSHIP RF 01(032)	18 441266 5021312 W	1956/08 4216	05 05	FR 0046	004 / 007 006 / 0:30	DO		1505353 () CLAY 0046 LMSN 0113
NEPEAN TOWNSHIP RF 01(032)	18 440996 5020982 W	1956/08 4216	05 04 04	FR 0051	005 / 007 006 / 0:30	DO		1505354 () CLAY 0049 MSND 0051 LMSN 0120
NEPEAN TOWNSHIP RF 01(032)	18 441121 5021222 W	1956/08 4216	05 05	FR 0040	010 / 013 006 / 0:30	DO		1505355 () CLAY 0018 LMSN 0108
NEPEAN TOWNSHIP RF 01(032)	18 441086 5021022 W	1956/08 4216	05 05	FR 0040	005 / 007 006 / 0:30	DO		1505356 () CLAY 0051 LMSN 0125
NEPEAN TOWNSHIP RF 01(032)	18 441451 5021517 W	1956/09 4216	05 05	FR 0040	003 / 005 006 / :0	DO		1505357 () CLAY 0024 LMSN 0122
NEPEAN TOWNSHIP RF 01(032)	18 441396 5021322 W	1956/09 3701	05 05	FR 0075 FR 0088	005 / 020 004 / 1:0	DO		1505358 () CLAY 0030 MSND 0055 BLDR GRVL 0065 LMSN 0088
NEPEAN TOWNSHIP RF 01(032)	18 441091 5021022 W	1956/10 4216	05 05	FR 0054	006 / 008 006 / 0:30	DO		1505359 () CLAY 0054 GRVL 0058 LMSN 0105

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(032)	18 441376 5021272 W	1956/12 4216	05 04 04	FR 0086	003 / 020 006 / 1:0	DO		1505360 () CLAY 0080 MSND 0086 LMSN 0129
NEPEAN TOWNSHIP RF 01(032)	18 441516 5021377 W	1957/10 4216	05 02	FR 0060 FR 0080	001 / 005 010 / 0:30	DO		1505361 () CLAY 0040 GREY LMSN 0118
NEPEAN TOWNSHIP RF 01(032)	18 441491 5021432 W	1957/10 4216	04 04	FR 0060	001 / 005 010 / 0:30	DO		1505362 () CLAY 0040 GREY LMSN 0115
NEPEAN TOWNSHIP RF 01(032)	18 442246 5021902 W	1958/07 3566	05 05	FR 0100	025 / 026 005 / 1:0	DO		1505363 () CLAY MSND STNS 0015 LMSN 0100
NEPEAN TOWNSHIP RF 01(032)	18 442121 5021537 W	1959/12 1603	04 02 02	FR 0095	009 / 025 012 / 3:0	DO		1505364 () CLAY 0003 LMSN 0095
NEPEAN TOWNSHIP RF 01(032)	18 442201 5021657 W	1960/11 4216	05 05	FR 0090	026 / 026 010 / 1:0	DO		1505365 () BLUE CLAY 0008 GREY LMSN 0094
NEPEAN TOWNSHIP RF 01(033)	18 442376 5022122 W	1947/08 4824	05 05	FR 0074	030 / / :0	DO		1506418 () LOAM 0006 LMSN 0074
NEPEAN TOWNSHIP RF 01(033)	18 442431 5022392 W	1955/10 3701	05 05	FR 0090 FR 0123	030 / 060 005 / 2:0	PS		1505420 () CLAY BLDR 0010 LMSN 0123
NEPEAN TOWNSHIP RF 01(033)	18 442451 5022352 W	1952/07 4216	05 15	FR 0085 FR 0040	006 / 008 008 / 0:20	DO		1505368 () CLAY 0016 LMSN 0085
NEPEAN TOWNSHIP RF 01(033)	18 442211 5022037 W	1952/08 4832	04 04	FR 0065 FR 0085	014 / 020 003 / 0:15	DO		1505369 () CLAY MSND STNS 0012 LMSN 0091
NEPEAN TOWNSHIP RF 01(033)	18 442466 5022182 W	1952/08 4216	05 05	FR 0100 FR 0140	031 / 035 008 / 0:20	DO		1505370 () CLAY 0020 LMSN 0140
NEPEAN TOWNSHIP RF 01(033)	18 442166 5022012 W	1952/09 4216	04 04	FR 0080 FR 0112	028 / 036 008 / 0:20	DO		1505371 () CLAY 0050 LMSN 0112

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE [2] CNTR [3]	CASING DIA [4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(033)	18 442381 5022282 W	1952/10 4216	04 04	FR 0077 FR 0040	010 / 012 008 / 0:20	DO		1505372 () CLAY 0027 LMSN 0077
NEPEAN TOWNSHIP RF 01(033)	18 442501 5022222 W	1952/10 3504	04 04	FR 0080 FR 0100 FR 0141	017 / 007 / 1:0	DO		1505373 () SILT 0005 CLAY MSND STNS 0023 LMSN 0141
NEPEAN TOWNSHIP RF 01(033)	18 442051 5022192 W	1952/10 3601	04 04	FR 0106	034 / 004 / 1:0	DO		1505374 () CLAY 0030 GRVL 0034 LMSN 0106
NEPEAN TOWNSHIP RF 01(033)	18 442416 5022312 W	1952/10 3601	04 04	FR 0095 FR 0040 FR 0060 FR 0080	008 / 008 003 / 1:0	DO		1505375 () BLUE CLAY 0010 GRVL 0030 LMSN 0120
NEPEAN TOWNSHIP RF 01(033)	18 442291 5022132 W	1952/11 5205	04 04	FR 0078	009 / 024 004 / 0:30	DO		1505376 () CLAY 0006 BLUE LMSN 0079
NEPEAN TOWNSHIP RF 01(033)	18 442191 5022132 W	1952/11 3601	04 04	FR 0090	040 / / :0	DO		1505377 () CLAY 0005 SNDS 0055 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442391 5022352 W	1952/11 3601	04 04 04	FR 0050 FR 0030 FR 0085	008 / 008 003 / 1:0	DO		1505378 () BLUE CLAY 0010 GRVL 0030 BLCK LMSN 0110
NEPEAN TOWNSHIP RF 01(033)	18 442356 5022327 W	1952/11 4216	04 04	FR 0025 FR 0042	013 / 015 008 / 0:20	DO		1505379 () CLAY 0011 LMSN 0040 BLCK SHLE 0042
NEPEAN TOWNSHIP RF 01(033)	18 442186 5022072 W	1952/11 5205	04 04	FR 0080	008 / 019 004 / 0:30	DO		1505380 () CLAY 0006 BLUE LMSN 0082
NEPEAN TOWNSHIP RF 01(033)	18 442341 5022357 W	1952/11 4216	04 04	FR 0025 FR 0105	010 / 012 008 / 0:20	DO		1505381 () CLAY 0018 SHLE 0020 LMSN 0105
NEPEAN TOWNSHIP RF 01(033)	18 442196 5022032 W	1952/11 5205	04 04	FR 0089	008 / 023 004 / 1:0	DO		1505382 () CLAY 0006 BLUE LMSN 0089

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(033)	18 442251 5022062 W	1952/11 5205	04 04	FR 0092	010 / 030 004 / 0:30	DO		1505383 () CLAY 0008 BLUE LMSN 0092
NEPEAN TOWNSHIP RF 01(033)	18 442116 5022082 W	1952/11 3601	04 04	FR 0085	040 / / 1:0	DO		1505384 () CLAY 0010 SNDS 0065 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442256 5022222 W	1952/12 4216	04 04	FR 0103 FR 0040	013 / 015 008 / 0:20	DO		1505385 () CLAY 0016 LMSN 0103
NEPEAN TOWNSHIP RF 01(033)	18 442071 5022202 W	1953/01 3601	04 04	FR 0090	040 / / 1:0	DO		1505386 () CLAY 0010 SNDS 0075 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442261 5022272 W	1953/03 3725	04 04	FR 0031 FR 0090	018 / 025 004 / 0:30	DO		1505387 () BLUE CLAY 0015 WHIT LMSN 0112
NEPEAN TOWNSHIP RF 01(033)	18 442056 5021457 W	1960/09 1301	02 07 07	FR 0110	015 / 023 030 / 1:0	PS		1505388 () GREY CLAY 0059 GREY LMSN 0245
NEPEAN TOWNSHIP RF 01(033)	18 442336 5022102 W	1952/11 3718	04 04	FR 0050	015 / 025 / :0	DO		1505389 () LOAM 0010 LMSN 0050 BLCK MSND 0080 GREY MSND 0088
NEPEAN TOWNSHIP RF 01(033)	18 442146 5022062 W	1952/12 3601	04 04	FR 0090	040 / / 1:0	DO		1505390 () CLAY 0010 SNDS 0060 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442401 5022142 W	1952/12 3718	04 04	FR 0050	010 / 025 010 / :0	DO		1505391 () LOAM BLDR 0010 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442436 5022162 W	1952/12 4216	04 04	FR 0040 FR 0090	013 / 015 008 / 0:20	DO		1505392 () CLAY 0016 LMSN 0090
NEPEAN TOWNSHIP RF 01(033)	18 442396 5022342 W	1952/12 3601	04 04	FR 0090 FR 0040 FR 0060	006 / 006 003 / 1:0	DO		1505393 () BLUE CLAY 0020 BLUE LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442336 5022242 W	1952/12 3504	04 04	FR 0080 FR 0045	010 / 010 005 / 1:0	DO		1505394 () CLAY MSND 0005 SHLE 0015 BLUE LMSN 0060 BLCK SHLE 0087

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(033)	18 442156 5022157 W	1952/12 3601	04 04	FR 0090	040 / 040 015 / 1:0	DO		1505395 () CLAY 0012 SNDS 0075 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442466 5022302 W	1952/12 4216	04 04	FR 0040 FR 0100	010 / 012 008 / 0:20	DO		1505396 () CLAY 0022 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442276 5022182 W	1953/01 3504	04 04	FR 0100 FR 0060 FR 0040	006 / 006 008 / 1:0	DO		1505397 () MSND BLDR 0008 BLUE LMSN 0101
NEPEAN TOWNSHIP RF 01(033)	18 442341 5022242 W	1953/01 4216	04 04	FR 0040 FR 0104	010 / 012 008 / 0:20	DO		1505398 () CLAY 0015 LMSN 0104
NEPEAN TOWNSHIP RF 01(033)	18 442446 5022222 W	1953/01 3601	04 04	FR 0040 FR 0065 FR 0100	005 / 005 003 / 1:0	DO		1505399 () BLUE CLAY 0020 BLUE LMSN 0110
NEPEAN TOWNSHIP RF 01(033)	18 442221 5022142 W	1953/01 3504	04 04	FR 0095 FR 0030 FR 0080	007 / 007 005 / 1:0	DO		1505400 () MSND BLDR 0008 BLUE LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442361 5022242 W	1953/01 3718	04 04	FR 0075 FR 0045	004 / 018 / :0	DO		1505401 () CLAY 0019 STNS 0024 GRVL 0028 STNS 0032 GRVL 0075 LMSN 0076
NEPEAN TOWNSHIP RF 01(033)	18 442171 5022222 W	1953/01 3601	04 04	FR 0090	040 / / 1:0	DO		1505402 () CLAY 0010 SNDS 0060 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442431 5022262 W	1953/01 3601	04 04	FR 0043 FR 0065 FR 0090	005 / 005 003 / 1:0	DO		1505403 () BLUE CLAY 0020 BLUE LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442401 5022222 W	1953/01 4216	04 04	FR 0099 FR 0040	003 / 004 008 / 0:20	DO		1505404 () CLAY 0015 LMSN 0099
NEPEAN TOWNSHIP RF 01(033)	18 442051 5022192 W	1953/01 3601	04 04	FR 0100	040 / / 1:0	DO		1505405 () CLAY 0010 SNDS 0065 LMSN 0100

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(033)	18 442311 5022192 W	1953/01 3718	04 04 04	FR 0084	010 / 018 / :0	DO		1505406 () CLAY 0009 STNS 0022 GRVL 0030 LMSN 0090
NEPEAN TOWNSHIP RF 01(033)	18 442436 5022382 W	1953/01 4216	04 04	FR 0040 FR 0109	006 / 007 008 / 0:20	DO		1505407 () CLAY 0018 LMSN 0109
NEPEAN TOWNSHIP RF 01(033)	18 442326 5022182 W	1953/02 3718	04 04	FR 0022	008 / 012 / :0	DO		1505408 () CLAY 0009 GRVL 0011 LMSN 0085
NEPEAN TOWNSHIP RF 01(033)	18 442471 5022292 W	1953/02 4216	05 05	FR 0103 FR 0040	002 / 003 008 / 0:20	DO		1505409 () CLAY 0020 LMSN 0103
NEPEAN TOWNSHIP RF 01(033)	18 442136 5022202 W	1953/02 3725	04 04	FR 0090 FR 0030	018 / 027 004 / 0:30	DO		1505410 () CLAY 0015 WHIT LMSN 0130
NEPEAN TOWNSHIP RF 01(033)	18 442186 5022187 W	1953/03 3601	04 04	FR 0072	010 / 012 015 / 0:30	DO		1505411 () BLUE CLAY 0006 BLUE LMSN 0112
NEPEAN TOWNSHIP RF 01(033)	18 442231 5022112 W	1953/03 3601	04 04	FR 0050	012 / 012 015 / 0:30	DO		1505412 () BLUE CLAY 0008 BLUE LMSN 0075
NEPEAN TOWNSHIP RF 01(033)	18 442181 5022222 W	1953/03 3725	04 04	FR 0032 FR 0089	018 / 026 005 / 0:30	DO		1505413 () CLAY 0015 WHIT LMSN 0112
NEPEAN TOWNSHIP RF 01(033)	18 442236 5022247 W	1953/03 3725	04 04	FR 0090 FR 0070	018 / 025 005 / 0:30	DO		1505414 () BLUE CLAY 0015 WHIT LMSN 0133
NEPEAN TOWNSHIP RF 01(033)	18 442151 5022112 W	1953/03 3601	04 04	FR 0095 FR 0045 FR 0055	010 / 011 004 / 1:0	DO		1505415 () BLUE CLAY 0005 LMSN 0050 SNDS 0055 SNDS LMSN 0109
NEPEAN TOWNSHIP RF 01(033)	18 442291 5022282 W	1953/04 3725	04 04	FR 0031 FR 0090	018 / 025 003 / 0:30	DO		1505416 () CLAY BLDR 0018 WHIT LMSN 0112
NEPEAN TOWNSHIP RF 01(033)	18 441961 5022312 W	1955/05 4833	04 04	FR 0097	020 / 040 005 / 0:15	DO		1505417 () LOAM 0005 LMSN 0101

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(033)	18 442126 5022022 W	1955/06 4216	05 05	FR 0040	018 / 020 006 / 0:30	DO		1505418 () CLAY 0018 LMSN 0100
NEPEAN TOWNSHIP RF 01(033)	18 442026 5022342 W	1955/06 4833	04 04	FR 0100	020 / 040 005 / 0:15	DO		1505419 () LOAM 0007 LMSN 0107
NEPEAN TOWNSHIP RF 01(033)	18 442501 5022222 W	1952/07 4216	05 05	FR 0104 FR 0140	031 / 031 008 / 0:20	DO		1505367 () CLAY 0018 LMSN 0106 LMSN 0140
NEPEAN TOWNSHIP RF 01(034)	18 441765 5022278 W	2012/10 1558						7199472 (Z139848) A
NEPEAN TOWNSHIP RF 01(034)	18 441516 5022332 W	1952/05 3601	04 04	FR 0162	032 / 003 / 1:0	DO		1505635 () CLAY 0006 LMSN 0162
NEPEAN TOWNSHIP RF 01(034)	18 441541 5022152 W	1952/05 3705	06 06	FR 0080 FR 0050	012 / 035 007 / 1:0	DO		1505636 () LOAM 0002 LMSN 0099
NEPEAN TOWNSHIP RF 01(034)	18 441661 5022232 W	1952/05 4833	05 05	FR 0165	005 / 011 005 / 0:15	DO		1505637 () LOAM MSND 0003 LMSN 0168
NEPEAN TOWNSHIP RF 01(034)	18 441526 5022342 W	1952/05 3601	05 05	FR 0150 FR 0060	012 / 065 005 / 0:13	DO		1505640 () FILL 0003 LMSN 0153
NEPEAN TOWNSHIP RF 01(034)	18 441481 5022072 W	1952/05 3705	06 06	FR 0060 FR 0085	008 / 020 010 / 1:0	DO		1505641 () LOAM 0003 LMSN 0096
NEPEAN TOWNSHIP RF 01(034)	18 441636 5022362 W	1952/05 4833	05 05	FR 0160	015 / 015 005 / 0:20	DO		1505645 () CLAY 0002 LMSN 0164
NEPEAN TOWNSHIP RF 01(034)	18 441641 5022222 W	1952/05 4833	05 05	FR 0165	005 / 010 005 / 0:15	DO		1505646 () LOAM CLAY 0003 LMSN 0168
NEPEAN TOWNSHIP RF 01(034)	18 441761 5022237 W	1952/06 3718	05 05	FR 0040	020 / 020 005 / :0	DO		1505648 () BRWN LOAM CLAY 0010 LMSN 0100

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441461 5022102 W	1952/06 3601	04 04	FR 0100 FR 0143	020 / 060 005 / 0:20	DO		1505651 () LOAM CLAY 0002 LMSN 0146
NEPEAN TOWNSHIP RF 01(034)	18 441556 5022352 W	1952/07 3601	04 04	FR 0100 FR 0165	030 / 034 005 / 0:25	DO		1505658 () FILL 0002 LMSN 0165
NEPEAN TOWNSHIP RF 01(034)	18 441756 5022332 W	1952/07 3718	04 04	FR 0100	015 / 018 004 / 1:0	DO		1505660 () CLAY 0006 GREY LMSN 0109
NEPEAN TOWNSHIP RF 01(034)	18 441821 5022372 W	1953/01 5205	04 04	FR 0161	028 / 004 / 0:30	DO		1505669 () CLAY LOAM 0003 LMSN 0162
NEPEAN TOWNSHIP RF 01(034)	18 441581 5022372 W	1953/02 3504	04 04	FR 0150 FR 0168 FR 0125	040 / 075 004 / 1:0	DO		1505670 () CLAY MSND STNS 0004 ROCK 0168
NEPEAN TOWNSHIP RF 01(034)	18 441571 5022272 W	1953/02 3718	04 04 04	FR 0135	016 / 020 / :0	DO		1505671 () CLAY 0002 STNS 0025 LMSN 0195
NEPEAN TOWNSHIP RF 01(034)	18 441496 5022222 W	1953/03 3718	04 04 04	FR 0075	016 / 030 / :0	DO		1505673 () CLAY 0002 STNS 0023 LMSN 0191
NEPEAN TOWNSHIP RF 01(034)	18 441471 5022162 W	1953/03 3601	04 04	FR	020 / / 1:0	DO		1505674 () CLAY 0003 LMSN 0165
NEPEAN TOWNSHIP RF 01(034)	18 441481 5022207 W	1953/03 3718	04 04	FR 0075	012 / 020 / :0	DO		1505675 () CLAY 0004 LMSN 0201
NEPEAN TOWNSHIP RF 01(034)	18 441596 5022147 W	1953/03 3566	04 04	FR 0080 FR 0174	018 / 026 007 / 0:30	DO		1505677 () CLAY MSND STNS 0004 LMSN 0174
NEPEAN TOWNSHIP RF 01(034)	18 441601 5022147 W	1953/03 3566	04 04	FR 0174 FR 0050	002 / 010 005 / 0:30	DO		1505678 () LOAM 0004 LMSN 0174
NEPEAN TOWNSHIP RF 01(034)	18 441896 5022327 W	1953/04 1301	04 04	FR 0126 FR 0040	008 / 013 008 / 0:20	DO		1505679 () CLAY 0010 GREY LMSN 0126

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441461 5022152 W	1953/04 3601	04 04	FR	020 / / 1:0	DO		1505680 () CLAY 0003 LMSN 0165
NEPEAN TOWNSHIP RF 01(034)	18 441501 5022282 W	1953/04 3718	04 04	FR 0082	015 / 020 / :0	DO		1505681 () CLAY 0003 LMSN 0140 BLUE LMSN 0175 LMSN 0205
NEPEAN TOWNSHIP RF 01(034)	18 441541 5022307 W	1953/05 3718	04 04	FR 0080	014 / 020 / :0	DO		1505682 () CLAY 0005 LMSN 0140 BLUE LMSN 0175 LMSN 0200
NEPEAN TOWNSHIP RF 01(034)	18 441541 5022122 W	1953/05 3601	04 04 04	FR	020 / / 1:0	DO		1505683 () CLAY 0003 LMSN 0160
NEPEAN TOWNSHIP RF 01(034)	18 441551 5022302 W	1953/05 3718	04 04	FR 0075	015 / 030 / :0	DO		1505684 () LMSN 0096 SNDS 0160
NEPEAN TOWNSHIP RF 01(034)	18 441626 5022302 W	1953/05 3601	04 04	FR 0080 FR 0155 FR 0110	010 / 013 004 / 1:0	DO		1505685 () LMSN 0020 BLCK SHLE SNDS 0100 SNDS 0155
NEPEAN TOWNSHIP RF 01(034)	18 441341 5022362 W	1953/06 1301	04 04	FR 0080 FR 0165	018 / 022 008 / 0:20	DO		1505686 () CLAY 0001 BRWN LMSN 0120 LMSN 0125 WHIT LMSN 0165
NEPEAN TOWNSHIP RF 01(034)	18 441716 5022352 W	1953/07 3718	04	FR	024 / 028 / :0	DO		1505687 () PRDR 0078 LMSN 0145 SNDS 0180
NEPEAN TOWNSHIP RF 01(034)	18 442006 5022392 W	1953/10 4833	05 05	FR 0170	035 / 080 005 / 0:20	DO		1505691 () LOAM 0004 LMSN 0178
NEPEAN TOWNSHIP RF 01(034)	18 441636 5022302 W	1953/12 3601	04 04	FR 0084	014 / 006 / 1:0	MN		1505692 () CLAY 0026 GRVL 0030 LMSN 0085
NEPEAN TOWNSHIP RF 01(034)	18 441441 5022172 W	1954/05 3566	05 05	FR 0140 FR 0095	015 / 035 008 / 1:0	DO		1505694 () CLAY STNS 0006 LMSN 0065 BLCK SHLE 0095 LMSN 0145
NEPEAN TOWNSHIP RF 01(034)	18 441456 5022222 W	1954/10 3566	04 04	FR 0085 FR 0102	015 / 020 005 / 0:30	DO		1505695 () LOAM MSND 0003 LMSN 0102

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441511 5022187 W	1955/04 4825	05 05	FR 0130	010 / 060 005 / 0:30	DO		1505696 () LMSN 0145
NEPEAN TOWNSHIP RF 01(034)	18 441676 5022287 W	1956/07 3566	05 05	FR 0030 FR 0125 FR 0215	022 / 115 006 / 1:0	DO		1505697 () LOAM GRVL 0003 BLUE LMSN 0180 GREY LMSN 0215
NEPEAN TOWNSHIP RF 01(034)	18 441611 5022252 W	1958/04 3718	04 04	FR 0075	018 / 020 004 / 1:0	DO		1505703 () CLAY 0018 GREY LMSN 0121
NEPEAN TOWNSHIP RF 01(034)	18 441611 5022252 W	1958/04 3566	05 05	FR 0156	015 / 020 007 / 12:0	DO		1505704 () LOAM 0006 LMSN 0156
NEPEAN TOWNSHIP RF 01(034)	18 440776 5021977 W	1962/06 3504	06 06	FR 0120	015 / 070 010 / 1:0	ST DO		1505707 () SILT BLDR 0045 LMSN 0120
NEPEAN TOWNSHIP RF 01(034)	18 441611 5022242 W	1952/03 3601	04 04	FR 0160	040 / 003 / 1:0	DO		1505811 () CLAY 0006 LMSN 0168
NEPEAN TOWNSHIP RF 01(034)	18 441381 5022292 W	1953/10 4833	05	FR 0155	016 / 021 005 / 0:15	DO		1505843 () PRDR 0099 LMSN 0160
NEPEAN TOWNSHIP RF 01(034)	18 441406 5022352 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505484 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441506 5022372 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505486 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441371 5022332 W	1951/05 3601	04 04	FR 0120	030 / / 1:0	DO		1505487 () CLAY 0005 SHLE 0020 GRNT 0120
NEPEAN TOWNSHIP RF 01(034)	18 441481 5022357 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505489 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441351 5022322 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505490 () CLAY 0005 SHLE 0020 GRNT 0100

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441451 5022342 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505491 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441426 5022322 W	1951/06 3601	04 04	FR 0100	030 / / 1:0	DO		1505492 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441766 5022387 W	1951/06 5448	05 05	FR 0100	008 / 030 007 / 0:30	DO		1505494 () CLAY 0004 LMSN 0100
NEPEAN TOWNSHIP RF 01(034)	18 441396 5022312 W	1951/06 3601	04 04	FR 0100	030 / / 1:0	DO		1505495 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441366 5022292 W	1951/06 3601	04 04	FR 0100	030 / / 1:0	DO		1505497 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441371 5022332 W	1951/08 3601	04	FR 0120	042 / / 1:0	DO		1505515 () PRDR 0120 BRWN LMSN 0182
NEPEAN TOWNSHIP RF 01(034)	18 441402 5022287 L	1951/09 4832		FR 0180 FR 0190 FR 0170		DO		1505517 () LMSN 0200
NEPEAN TOWNSHIP RF 01(034)	18 441491 5022362 W	1951/09 3601	04	FR 0175	045 / 055 005 / 0:12	DO		1505523 () LMSN 0186
NEPEAN TOWNSHIP RF 01(034)	18 441501 5022282 W	1951/09 4833	04	FR	020 / 008 / 0:30	DO		1505524 () LMSN 0065
NEPEAN TOWNSHIP RF 01(034)	18 441481 5022357 W	1951/10 3601	04	FR 0175	045 / 055 005 / 0:13	DO		1505526 () PRDR 0098 LMSN 0186
NEPEAN TOWNSHIP RF 01(034)	18 441531 5022382 W	1951/10 3601	04	FR 0175	045 / 055 005 / 0:13	DO		1505527 () PRDR 0138 LMSN 0188
NEPEAN TOWNSHIP RF 01(034)	18 441456 5022382 W	1951/10 3601	04	FR 0090	043 / / 1:0	DO		1505528 () PRDR 0090 LMSN 0180

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441541 5022302 W	1951/10 4833	04	FR	020 / 008 / 0:30	DO		1505529 () PRDR 0084
NEPEAN TOWNSHIP RF 01(034)	18 441451 5022337 W	1951/10 3601	04 04	FR 0150 FR 0180 FR 0090	050 / 063 005 / 0:13	DO		1505532 () LOAM 0004 LMSN 0185
NEPEAN TOWNSHIP RF 01(034)	18 441381 5022292 W	1951/10 3601	04	FR 0165	045 / 055 005 / 0:13	DO		1505534 () PRDR 0095 LMSN 0180
NEPEAN TOWNSHIP RF 01(034)	18 441776 5022382 W	1951/10 5448	05 05	FR 0095	010 / 025 005 / 0:30	DO		1505535 () OBDN 0004 LMSN 0095
NEPEAN TOWNSHIP RF 01(034)	18 441431 5022282 W	1951/11 3601	04 04	FR 0090 FR 0150 FR 0170	050 / 067 005 / 0:13	DO		1505537 () LOAM 0004 LMSN 0187
NEPEAN TOWNSHIP RF 01(034)	18 441451 5022292 W	1951/11 3601	04 04	FR 0150 FR 0170	040 / 055 005 / 0:13	DO		1505539 () LOAM 0003 LMSN 0187
NEPEAN TOWNSHIP RF 01(034)	18 441851 5022392 W	1952/07 3601	04 04	FR 0060 FR 0095	014 / 055 008 / 0:20	DO		1505545 () LOAM 0004 LMSN 0115
NEPEAN TOWNSHIP RF 01(034)	18 441826 5022282 W	1952/08 3718	04 04	FR 0110	015 / 018 004 / 1:0	DO		1505547 () CLAY 0006 GREY LMSN 0125
NEPEAN TOWNSHIP RF 01(034)	18 441936 5022392 W	1952/08 3601	04 04	FR 0080 FR 0110	014 / 060 006 / 0:13	DO		1505548 () LOAM 0008 LMSN 0115
NEPEAN TOWNSHIP RF 01(034)	18 441811 5022272 W	1952/08 3718	04 04	FR 0110	015 / 018 004 / 1:0	DO		1505552 () CLAY 0006 GREY LMSN 0125
NEPEAN TOWNSHIP RF 01(034)	18 441921 5022347 W	1952/08 3601	04 04	FR 0080 FR 0110	012 / 040 006 / 0:15	DO		1505555 () LOAM 0003 LMSN 0120
NEPEAN TOWNSHIP RF 01(034)	18 441566 5022022 W	1952/08 3601	04 04	FR 0140	040 / 004 / 1:0	DO		1505556 () CLAY 0004 LMSN 0140

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441556 5022157 W	1952/08 3601	04 04	FR 0132	032 / 003 / 1:0	DO		1505557 () CLAY 0006 LMSN 0132
NEPEAN TOWNSHIP RF 01(034)	18 441781 5022262 W	1952/08 3718	04 04	FR 0095	015 / 018 004 / 1:0	DO		1505558 () CLAY 0005 GREY LMSN 0110
NEPEAN TOWNSHIP RF 01(034)	18 441901 5022367 W	1952/08 3601	04 04	FR 0080 FR 0110	014 / 050 006 / 0:13	DO		1505559 () LOAM 0004 LMSN 0115
NEPEAN TOWNSHIP RF 01(034)	18 441841 5022292 W	1952/09 3601	04 04	FR 0117	027 / 002 / 1:0	DO		1505560 () CLAY 0008 LMSN 0132
NEPEAN TOWNSHIP RF 01(034)	18 441716 5022222 W	1952/09 3718	04 04	FR 0110	015 / 018 004 / 1:0	DO		1505563 () BRWN CLAY 0006 GREY LMSN 0125
NEPEAN TOWNSHIP RF 01(034)	18 441826 5022282 W	1952/09 3601	04 04	FR 0125	035 / 003 / 1:0	DO		1505565 () CLAY 0006 LMSN 0125
NEPEAN TOWNSHIP RF 01(034)	18 441736 5022232 W	1952/09 3718	04 04	FR 0100	015 / 018 004 / 1:0	DO		1505567 () CLAY 0006 GREY LMSN 0115
NEPEAN TOWNSHIP RF 01(034)	18 441711 5022257 W	1952/10 3718	04 04	FR 0111	025 / 035 004 / 1:0	DO		1505570 () CLAY 0006 GREY LMSN 0140
NEPEAN TOWNSHIP RF 01(034)	18 441786 5022302 W	1952/10 3718	04 04	FR 0110	015 / 015 004 / 1:0	DO		1505572 () CLAY 0006 GREY LMSN 0120
NEPEAN TOWNSHIP RF 01(034)	18 441821 5022317 W	1952/10 3718	04 04	FR 0100	015 / 020 004 / 1:0	DO		1505573 () CLAY 0006 GREY LMSN 0115
NEPEAN TOWNSHIP RF 01(034)	18 441771 5022287 W	1952/11 3718	04 04	FR 0111	015 / 018 004 / 1:0	DO		1505576 () CLAY 0004 GREY LMSN 0126
NEPEAN TOWNSHIP RF 01(034)	18 441841 5022332 W	1952/11 3718	04 04	FR 0115	012 / 020 004 / 1:0	DO		1505581 () CLAY 0006 LMSN 0126

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441606 5022247 W	1952/11 4832	04 04	FR 0090 FR 0140 FR 0045	030 / 046 003 / 0:20	DO		1505582 () MSND FILL 0002 HPAN 0004 LMSN 0142
NEPEAN TOWNSHIP RF 01(034)	18 441686 5022287 W	1952/12 3718	04 04	FR 0070	010 / 025 010 / :0	DO		1505583 () PRDR 0070 LMSN 0140
NEPEAN TOWNSHIP RF 01(034)	18 441581 5022232 W	1952/12 5205	04 04	FR 0140 FR 0080	014 / 027 003 / 1:0	DO		1505584 () LOAM 0003 LMSN 0143
NEPEAN TOWNSHIP RF 01(034)	18 441711 5022302 W	1952/12 3718	04 04	FR 0040	010 / 025 / :0	DO		1505585 () ROCK LOAM 0010 LMSN 0090
NEPEAN TOWNSHIP RF 01(034)	18 441746 5022322 W	1952/12 3718	04 04	FR 0108	009 / 018 004 / 1:0	DO		1505586 () CLAY 0006 GREY LMSN 0110
NEPEAN TOWNSHIP RF 01(034)	18 441746 5022282 W	1952/12 3718	04 04	FR 0105	010 / 018 004 / 1:0	DO		1505587 () PRDR 0075 GREY LMSN 0115
NEPEAN TOWNSHIP RF 01(034)	18 441486 5022312 W	1951/11 3601	04 04	FR 0168 FR 0150	045 / 055 005 / 0:13	DO		1505590 () LOAM MSND 0003 LMSN 0185
NEPEAN TOWNSHIP RF 01(034)	18 441771 5022382 W	1951/12 3601	04 04		012 / 155 008 / 0:25	DO		1505592 () LOAM 0004 LMSN 0155
NEPEAN TOWNSHIP RF 01(034)	18 441631 5022392 W	1951/12 5448	05 05	FR 0100	010 / 035 005 / 0:30	DO		1505595 () OBDN 0005 LMSN 0100
NEPEAN TOWNSHIP RF 01(034)	18 441626 5022392 W	1952/02 4833	05 05	FR 0155 FR 0160	046 / 046 008 / 0:30	DO		1505610 () BLUE LMSN 0156 UNKN UNKN UNKN 0160
NEPEAN TOWNSHIP RF 01(034)	18 441511 5022192 W	1952/03 4832	04 04	FR 0135 FR 0160 FR 0060	010 / 090 004 / 0:20	DO		1505617 () LOAM 0002 LMSN 0164
NEPEAN TOWNSHIP RF 01(034)	18 441591 5022232 W	1952/03 3601	04 04	FR 0150 FR 0100	012 / 055 006 / 0:13	DO		1505618 () LMSN 0165

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441661 5022187 W	1952/03 4833	05 05	FR 0157 FR 0020 FR 0040 FR 0060	006 / 012 005 / 0:20	DO		1505619 () CLAY 0002 LMSN 0157
NEPEAN TOWNSHIP RF 01(034)	18 441686 5022387 W	1952/11 4832	05 05	FR 0150 FR 0065 FR 0120	015 / 085 004 / 1:0	DO		1505620 () LMSN 0160
NEPEAN TOWNSHIP RF 01(034)	18 441661 5022232 W	1952/04 4833	05 05	FR 0167	008 / 011 005 / 0:20	DO		1505622 () CLAY 0003 LMSN 0167
NEPEAN TOWNSHIP RF 01(034)	18 441661 5022232 W	1952/04 4833	05 05	FR 0167	008 / 012 005 / 0:20	DO		1505623 () CLAY 0003 LMSN 0167
NEPEAN TOWNSHIP RF 01(034)	18 441576 5022182 W	1952/04 3601	04 04	FR 0060 FR 0165	012 / 070 005 / 0:13	DO		1505624 () LMSN 0170
NEPEAN TOWNSHIP RF 01(034)	18 441661 5022192 W	1952/04 4833	05 05	FR 0157	006 / 012 005 / 0:20	DO		1505625 () CLAY 0002 LMSN 0157
NEPEAN TOWNSHIP RF 01(034)	18 441861 5022307 W	1952/07 3718	04 04	FR 0110	015 / 018 004 / 1:0	DO		1505628 () CLAY 0006 GREY LMSN 0125
NEPEAN TOWNSHIP RF 01(034)	18 441586 5022127 W	1952/04 3705	06 06	FR 0080 FR 0050	014 / 050 008 / 1:0	DO		1505629 () LOAM 0004 LMSN 0095
NEPEAN TOWNSHIP RF 01(034)	18 441581 5022372 W	1952/04 3601	04 04	FR 0165	035 / 003 / 1:0	DO		1505630 () CLAY 0004 LMSN 0165
NEPEAN TOWNSHIP RF 01(034)	18 441581 5022172 W	1952/04 3601	04 04	FR 0060 FR 0165	014 / 070 005 / 0:13	DO		1505632 () FILL 0004 LMSN 0167
NEPEAN TOWNSHIP RF 01(034)	18 441636 5022352 W	1952/05 4833	05 05	FR 0164	010 / 015 005 / 0:20	DO		1505634 () FILL 0003 LMSN 0173

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 01(034)	18 441571 5022367 W	1950/12 3601	04 04 04	FR 0100	020 / 020 / 1:0	DO		1505437 () CLAY 0003 SHLE 0020 LMSN 0100
NEPEAN TOWNSHIP RF 01(034)	18 441671 5022322 W	1951/04 5448	05 05	FR 0080	010 / 015 007 / 0:30	DO		1505468 () CLAY MSND 0004 LMSN 0080
NEPEAN TOWNSHIP RF 01(034)	18 441561 5022262 W	1951/04 5448	05 05	FR 0080	010 / 015 007 / 0:30	DO		1505472 () CLAY MSND 0004 LMSN 0080
NEPEAN TOWNSHIP RF 01(034)	18 441456 5022382 W	1951/05 3601	04 04	FR	030 / / 1:0	DO		1505477 () CLAY 0005 SHLE 0020 GRNT 0090
NEPEAN TOWNSHIP RF 01(034)	18 441576 5022372 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505480 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441426 5022367 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505481 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(034)	18 441531 5022382 W	1951/05 3601	04 04	FR 0100	030 / / 1:0	DO		1505482 () CLAY 0005 SHLE 0020 GRNT 0100
NEPEAN TOWNSHIP RF 01(035)	18 440416 5022122 W	1961/02 3504	06 06	FR 0140	012 / 300 010 / 1:0	CO		1505881 () SILT BLDR 0048 LMSN 0315
NEPEAN TOWNSHIP RF 01(035)	18 440416 5022127 W	1961/02 3504	06 06 06	FR 0250	010 / 140 030 / 24:0	CO		1505882 () SILT BLDR 0050 LMSN 0250
NEPEAN TOWNSHIP RF 01(035)	18 440541 5022092 W	1961/02 3504	06 06	FR 0250	010 / 150 083 / 24:0	CO		1505711 () SILT BLDR 0048 LMSN 0250
NEPEAN TOWNSHIP RF 01(035)	18 440407 5022277 W	2004/07 6032	02			NU	10 15	1535159 (Z05457) A005119 BLCK 0000 GREY SILT CLAY GRVL 0010 GREY SILT GRVL HARD 0025
NEPEAN TOWNSHIP RF 02(027)	18 441631 5018952 W	1960/09 3601	05 05	FR 0088	024 / 024 006 / 1:0	DO		1506015 () GREY LOAM 0068 GREY LMSN 0088

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 02(027)	18 441601 5018752 W	1957/10 3566	05 05	FR 0124	025 / 085 006 / 1:0	DO ST		1506014 () MSND 0069 LMSN 0124
NEPEAN TOWNSHIP RF 02(027)	18 441671 5018802 W	1956/05 4832	05 04 04	FR 0075 FR 0125	019 / 035 004 / 0:20	DO		1506013 () MSND 0045 BLUE LMSN 0130
NEPEAN TOWNSHIP RF 02(027)	18 440911 5018662 W	1962/04 4305	10 10	FR 0070 FR 0151 FR 0233 FR 0192	034 / 126 385 / 58:0	IR		1506012 () MSND 0066 GREY LMSN 0155 GREY SNDS 0247
NEPEAN TOWNSHIP RF 02(028)	18 441451 5019352 W	1955/01 1301	05 05	FR 0050	020 / 080 002 / 1:0	DO		1506016 () MSND 0050 GRVL 0055 MSND 0056 SNDS 0230
NEPEAN TOWNSHIP RF 02(029)	18 441271 5019862 W	1958/01 4832	04 04	FR 0103 FR 0086	030 / 035 005 / 0:20	DO		1506017 () MSND 0050 HPAN 0060 LMSN 0105
NEPEAN TOWNSHIP RF 02(030)	18 440132 5019566 L	1994/11 6844	02	UK 0006		NU	5 10	1528377 (154299) BRWN LOAM 0002 BRWN FSND SILT 0009 BRWN SAND SILT 0017
NEPEAN TOWNSHIP RF 02(030)	18 440132 5019566 L	1994/11 6844	02	UK 0018		NU	10 10	1528376 (154298) BRWN LOAM 0003 BRWN SILT CLAY 0008 BRWN FSND SILT 0020
NEPEAN TOWNSHIP RF 02(030)	18 440531 5019922 W	1958/03 3701	10 10	FR 0185 FR 0197 FR 0100	-002 / 080 310 / 48:0	PS		1506019 () SILT 0016 GREY LMSN 0075 SNDS 0185 SNDS GRNT 0197
NEPEAN TOWNSHIP RF 02(031)	18 440511 5020022 W	1964/12 3002	10 10	FR 0180 FR 0280 FR 0100 FR 0380	015 / 200 250 / 72:0	MN		1506020 () BRWN LOAM MSND 0012 BLUE CLAY FSND 0038 GREY LMSN 0047 GREY SNDS 0450
NEPEAN TOWNSHIP RF 02(031)	18 440821 5020602 W	1958/08 3701	08 08	FR 0100 FR 0132	004 / 007 050 / 48:0	IN		1506021 () BLCK MUCK 0002 CLAY MSND 0042 MSND 0074 GREY LMSN 0130 SNDS 0132

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP RF 02(031)	18 439597 5019402 W	2002/10 1414	06 08 06	FR 0099 FR 0190 FR 0230	/ 260 025 / 1:0	DO		1533242 (252721) BRWN SAND LOOS 0007 BRWN SAND BLDR LOOS 0030 BRWN SAND GRVL BLDR 0039 GREY LMSN ROCK LYRD 0098 GREY LMSN ROCK FCRD 0110 WHIT SNDS HARD 0160 WHIT LMSN SNDS LYRD 0185 WHIT SNDS SHLE LYRD 0192 WHIT SNDS SNDS HARD 0260
NEPEAN TOWNSHIP RF 02(032)	18 440730 5020621 W	1981/10 3644	06 06	UK 0125 UK 0080	025 / 080 006 / 1:0	CO		1517696 () GREY SAND LOAM 0008 GREY HPAN 0030 GREY HPAN STNS 0032 GREY HPAN 0040 GREY GRVL 0048 GREY LMSN SHLY 0130
NEPEAN TOWNSHIP RF 02(033)	18 440465 5021705 W	2011/02 7417	02			NU		7159535 (Z127039) A
NEPEAN TOWNSHIP RF 02(033)	18 440686 5021187 W	2010/03 7417	06 06			TH		7143544 (Z108105) A093525 BRWN CLAY SILT HARD 0010 GREY CLAY SOFT 0024 GREY CLAY SILT HARD 0043 GREY GRVL PCKD 0045 GREY DLMT LYRD 0080
NEPEAN TOWNSHIP RF 02(035)	18 439391 5021622 W	1971/05 1802	06	FR 0067	039 / 062 030 / 2:0	DO		1511165 () LOAM 0001 FSND 0012 BLDR 0015 YLLW SAND 0061 GREY CSND 0062 GRVL 0068
NEPEAN TOWNSHIP RF 02(035)	18 440130 5022021 W	1978/11 1558	06 06	FR 0148 FR 0125	020 / 075 005 / 1:0	DO		1516834 () BRWN CLAY 0017 GREY LMSN LYRD SOFT 0150
NEPEAN TOWNSHIP RF 03(029)	18 439361 5018422 W	1952/04 3718	05	UK 0035	030 / / :0	NU		1506059 () A BRWN MSND 0002 BLUE CLAY 0015 CLAY MSND STNS 0035 BRWN MSND 0040
NEPEAN TOWNSHIP RF A(031)	18 443006 5021582 W	1953/11 3566	05 05	FR 0114 FR 0060	022 / 050 007 / 0:30	ST DO		1504397 () BLDR CLAY MSND 0010 LMSN 0114
NEPEAN TOWNSHIP RF A(032)	18 442776 5022062 W	1953/10 3566	05	FR 0173 FR 0060	017 / 021 006 / 0:30	ST		1504400 () PRDR 0051 LMSN 0100 SNDS SHLE 0173
NEPEAN TOWNSHIP RF A(032)	18 442711 5021842 W	1953/08 4216	05 05	FR 0060 FR 0107	025 / 030 008 / 0:30	DO		1504399 () CLAY 0018 LMSN 0107

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP 01(025)	18 442828 5018724 L	1993/09 1558	06 06	UK 0164	030 / 172 005 / 1:0	DO		1527449 (135978) BRWN SAND 0005 BRWN CLAY 0013 GREY CLAY 0039 GREY CLAY SNDY BLDR 0053 GREY LMSN 0119 GREY SNDS 0174
NEPEAN TOWNSHIP 01(028)	18 442344 5019944 L	1999/08 6455	06 06	MN 0044	012 / 020 030 / 1:0	DO		1530789 (204679) BRWN SAND PCKD 0015 GREY CLAY THIK 0031 BLCK GRVL PCKD 0035 GREY LMSN HARD 0095
NEPEAN TOWNSHIP 01(034)	18 441403 5022286 L	1992/12 1558	06 06 06	UK 0509 UK 0580 UK 0311	011 / 028 020 / 1:0	NU		1527018 (130001) BRWN CLAY 0008 GREY CLAY 0025 GREY HPAN BLDR 0044 GREY LMSN SOFT LYRD 0053 GREY LMSN MGRD 0090 GREY SILT STNS 0225 GREY LMSN 0425 GREY SNDS 0525 GREY SNDS HARD 0585 GRNT 0600
NEPEAN TOWNSHIP 01(034)	18 441403 5022286 L	1992/12 1558	06 06 06	UK 0086 UK 0138 UK 0325 UK 0355 UK 0208		NU		1527017 (130005) BRWN CLAY 0008 GREY CLAY 0025 GREY TILL PCKD 0054 GREY LMSN SILT STNS 0395 GREY SNDS 0460 GREY GRNT SNDS 0500
NEPEAN TOWNSHIP 01(034)	18 441403 5022286 L	1992/12 1558	06 06 06	UK 0094 UK 0120 UK 0325 UK 0169	010 / 012 020 / 1:0	NU		1527016 (130003) BRWN CLAY 0008 GREY CLAY 0033 GREY HPAN BLDR GRVL 0076 GREY LMSN FCRD LYRD 0225 GREY SNDS HARD 0340
NEPEAN TOWNSHIP 02(030)	18 439583 5019189 W	2007/04 4875	06		022 / 103 024 / 1:0	IR		7043813 (Z73745) A049293 0056
NEPEAN TOWNSHIP (021)	18 442136 5018932 W	2002/10 6907						1533540 (257702) A
NEPEAN TOWNSHIP ()	18 440429 5020021 W	2012/10 7323				MT		7190446 (Z148859) A096486 A
NEPEAN TOWNSHIP ()	18 442196 5020010 W	2012/10 7323				MT		7190447 (Z148860) A
NEPEAN TOWNSHIP ()	18 441069 5020360 W	2012/05 1844	02			MO	10 10	7191212 (Z153927) A122947 GREY GRVL FILL SAND 0002 YLLW SAND FILL SILT 0005 GREY SILT SAND CLAY 0013 GREY SAND SILT LTCL 0020

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP ()	18 441138 5020375 W	2012/05 1844	02			MO	10	7191213 (Z153929) A130178 0001 GREY GRVL SAND FILL 0001 YLLW SAND GRVL SILT 0007 GREY SILT SAND CLAY 0017 GREY SAND GRVL SILT
NEPEAN TOWNSHIP ()	18 441066 5020373 W	2012/05 1844	02			MO	7 10	7191214 (Z153928) _NO_TAG GREY FILL 0001 GREY GRVL STNS SAND 0003 GREY SILT SAND CLYY 0016 GREY SAND SILT GRVL 0017
NEPEAN TOWNSHIP ()	18 442865 5021385 W	2012/08 1844						7197932 (C20604) A122861 P
NEPEAN TOWNSHIP ()	18 442825 5021578 W	 6894	02				2.5	7201222 (Z096880) A111262 BRWN SAND CLAY GRVL 0006
NEPEAN TOWNSHIP ()	18 440760 5021310 W	2012/04 7328	01	0008		MO	10 0	7220787 (Z171274) A122815 BLCK LOAM 0001 BRWN SAND SLTY 0002 BRWN CLAY SAND SLTY 0004 BRWN CLAY SLTY 0018 GREY SAND CLAY GRVL 0020
NEPEAN TOWNSHIP ()	18 442705 5020847 W	 7082						7240001 (C24066) A175216 P
NEPEAN TOWNSHIP ()	18 441095 5020324 W	2010/11 1844	02			MO		7158263 (M06807) 0001 GREY GRVL 0001 GREY SILT SAND GRVL 0006
NEPEAN TOWNSHIP ()	18 441463 5019742 W	2011/10 7241	02			MT	16 10	7172102 (Z140239) A094132 BLCK LOAM SAND LOOS 0001 BRWN MSND SILT 0023 BRWN FSND SILT 0026
NEPEAN TOWNSHIP ()	18 441459 5019740 W	2011/10 7241	02			MT	17 10	7172103 (Z140240) A094128 BLCK LOAM SAND LOOS 0001 BRWN MSND SILT 0023 BRWN FSND SILT 0027
NEPEAN TOWNSHIP ()	18 441458 5019743 W	2011/10 7241	02			MT	17 10	7172104 (Z140241) A094111 BLCK LOAM SAND LOOS 0001 BRWN MSND SILT 0023 BRWN FSND SILT 0027
NEPEAN TOWNSHIP ()	18 441466 5019742 W	2011/10 7241	02			MT	17 10	7172105 (Z140238) A094134 BLCK LOAM SAND LOOS 0001 BRWN MSND SILT 0023 BRWN FSND SILT 0027
NEPEAN TOWNSHIP ()	18 441948 5018535 W	2011/12 7241	01			MT	9	7174252 (Z113226) A085434 BRWN MSND SOFT 0012 BRWN MSND SILT SOFT 0019

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP ()	18 441960 5018535 W	2011/12 7241	01			MT	9 10	7174253 (Z113225) A085435 BRWN MSND SOFT 0012 BRWN MSND SILT SOFT 0019
NEPEAN TOWNSHIP ()	18 442145 5018590 W	2011/12 7241	01			MT	9 10	7174254 (Z129522) A085436 BRWN MSND SOFT 0012 BRWN MSND SILT SOFT 0019
NEPEAN TOWNSHIP ()	18 442367 5019401 W	2012/03 6364				DO		7178893 (Z109070) A094174
NEPEAN TOWNSHIP ()	18 442654 5021901 W	2012/07 7241	01			MT	8 10	7186446 (Z148640) A126609 BRWN SAND LOAM LOOS 0002 BRWN TILL GRVL HARD 0012 BRWN TILL SAND HARD 0018
NEPEAN TOWNSHIP ()	18 442872 5018464 W	2012/09 4879	06 06	0076 0125	021 / 031 008 / 1:0	DO		7190613 (Z140923) A138210 RED SAND 0009 GREY SAND 0052 GREY SAND GRVL 0062 BRWN SNDS 0135
NEPEAN TOWNSHIP ()	18 440769 5021292 W	2013/06 7241	05			MT	1.5 3.07	7205156 (Z173657) BRWN SAND SOFT DRY 0002 GREY CLAY SOFT 0003 GREY CLAY SOFT WBRG 0005
NEPEAN TOWNSHIP ()	18 440772 5021297 W	2013/06 7241	02			MT	4 12	7205157 (Z173659) A145261 BRWN SAND SOFT DRY 0005 GREY CLAY SOFT 0010 GREY CLAY SOFT WBRG 0016
NEPEAN TOWNSHIP ()	18 440761 5021305 W	2013/06 7241	01			MT	4 10	7205158 (Z173658) A145262 BRWN SAND DRY 0005 GREY CLAY SOFT 0014
NEPEAN TOWNSHIP ()	18 440751 5021328 W	2013/06 7241	02			MT	6 10	7205203 (Z168874) A146606 A BLCK LOAM 0002 GREY CLAY SILT 0011 GREY CLAY SILT SOFT 0016
NEPEAN TOWNSHIP ()	18 440742 5021225 W	2013/06 7241	02			MT	4 10	7205204 (Z168875) A146604 BLCK GRVL 0001 GREY CLAY SILT 0008 GREY CLAY SILT WBRG 0014
NEPEAN TOWNSHIP ()	18 440766 5021297 W	2013/06 7241	05			MT	1.83 2.97	7205205 (Z168873) A146605 BLCK LOAM SOFT 0000 BRWN CLAY SOFT 0002 BRWN CLAY SILT SOFT 0003 GREY CLAY SILT SOFT 0005
NEPEAN TOWNSHIP ()	18 443059 5019785 W	2014/01 7238	02			MO	5 10	7216314 (Z180943) A157604 GREY SILT SAND SOFT 0015

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP ()	18 443094 5019781 W	2014/01 7238	02			MO	3.5 10	7216316 (Z180944) A157605 GREY SILT GRVL SOFT 0015
NEPEAN TOWNSHIP ()	18 442568 5020780 W	2014/08 7082						7228897 (C16870) A127057 P
NEPEAN TOWNSHIP ()	18 442887 5021363 W	2014/09 1844						7233984 (C22637) A156973 P
NEPEAN TOWNSHIP ()	18 441104 5020347 W	2014/12 1844						7239267 (C23847) A148000 P
NEPEAN TOWNSHIP ()	18 441891 5019100 W	2011/10 6364				DO		7170731 (Z109052) A094175
NEPEAN TOWNSHIP ()	18 442252 5019353 W	2012/07 1119						7185851 (Z144623) A
NEPEAN TOWNSHIP ()	18 440759 5021307 W	2014/09 7241						7228427 (Z188252) A145262 P
NEPEAN TOWNSHIP ()	18 442472 5019269 W	2014/12 1119						7237673 (Z191341) P
NEPEAN TOWNSHIP ()	18 442610 5021932 W	2012/07 7241	01			MT	6 10	7185239 (Z152718) A133537 BLCK ---- GRVL LOOS 0001 BRWN SAND SILT SOFT 0007 BLCK SILT STNS DNSE 0016
NEPEAN TOWNSHIP ()	18 442602 5021926 W	2012/07 7241	01			MT	7 10	7185238 (Z152719) A133538 BLCK ---- GRVL LOOS 0001 BRWN SAND SILT SOFT 0007 BLCK SILT STNS DNSE 0017
NEPEAN TOWNSHIP ()	18 442822 5021344 W	2011/08 1844						7174548 (M08599) A110641 P
NEPEAN TOWNSHIP ()	18 442822 5021343 W	2011/10 1844						7174547 (M08706) A110641 P
NEPEAN TOWNSHIP ()	18 441320 5019612 W	2005/08 6894						1535873 (Z33688) A
NEPEAN TOWNSHIP ()	18 441452 5019612 W	2005/08 6894						1535872 (Z33687) A
NEPEAN TOWNSHIP ()	18 442450 5022250 W	2005/06 6894						1535688 (Z33651) A

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
NEPEAN TOWNSHIP ()	18 443021 5019013 W	2005/04 1844			/ 049 011 / 1:0	NU		1535505 (Z27115) A
OTTAWA CITY (008)	18 440619 5021092 W	2008/06 1844						7109377 (M01051) A040869 A
OTTAWA CITY ()	18 440235 5022332 W	 6894						7189220 (M05030) P
OTTAWA CITY ()	18 439976 5022162 W	1953/03 3718	04 04	FR 0100 FR 0071 FR 0050	030 / 040 003 / 0:30	DO		1507865 () GREY LOAM CLAY 0033 LMSN 0113 LMSN SHLE 0179
OTTAWA CITY ()	18 439551 5021902 W	1956/12 3114	04 04	FR 0134	050 / 050 007 / 0:30	DO		1507884 () PRDG 0019 CLAY 0051 MSND 0052 GREY LMSN 0134
OTTAWA CITY ()	18 440501 5022382 W	1960/04 3601	06 06	FR 0145	022 / 032 005 / 1:0	DO ST		1507887 () CLAY 0047 LMSN 0145
OTTAWA CITY ()	18 440351 5022387 W	1961/07 1802	06 06	FR 0150	030 / 100 002 / 1:0	CO		1507889 () BLUE CLAY 0032 BLCK SHLE 0272
OTTAWA CITY ()	18 441571 5022282 W	1954/03 3601	04 04	FR 0070 FR 0035	030 / 030 010 / 1:0	DO		1509023 () LOAM 0003 LMSN 0140
OTTAWA CITY ()	18 440231 5022332 W	1959/07 1802	06 06	FR 0090	035 / 080 008 / 2:0	PS		1509083 () CLAY 0022 MSND BLDR 0050 LMSN 0097
OTTAWA CITY ()	18 442500 5022250 W	2004/02 1844	20	FR 0008			4 10	1534584 (Z05672) A001602 BRWN SAND GRVL FILL 0003 BRWN SILT CLAY SAND 0017
OTTAWA CITY ()	18 442840 5020153 W	2006/09 7241	02				14 10	7038486 (Z51925) A053770 A BRWN FILL SAND 0003 BRWN SAND SILT 0010 BRWN SAND SILT 0024
OTTAWA CITY ()	18 443010 5020437 W	2007/02 6838	02			NU	9 9	7042381 (Z45874) A019073 BRWN SAND GRVL SILT 0004 BRWN SAND GRVL SILT 0008 BRWN SAND GRVL SILT 0010 GREY STNS 0018

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OTTAWA CITY ()	18 442605 5021914 W	2007/10 7241	 02			MN		7052462 (Z63679) A063710 BRWN SAND SOFT CSND 0005 BRWN SAND SILT SOFT 0011 GREY SILT CLAY SAND 0019 GREY SILT SAND CLAY 0025
OTTAWA CITY ()	18 440096 5022222 W	1951/11 3718	 04 04	FR 0065 FR 0100 FR 0050 FR 0117	040 / 040 003 / 1:0	DO		1507860 () BLUE CLAY 0040 BLUE LMSN 0117
OTTAWA CITY ()	18 441103 5020372 W	2008/11 1844				MO		7122580 (M04551) A074590 BLCK ---- 0001 BRWN SAND 0003 GREY CLAY SILT 0015 BRWN SAND 0020
OTTAWA CITY ()	18 441093 5020356 W	2009/05 1844						7129173 (M04497) A074590 A
OTTAWA CITY ()	18 441036 5020352 W	2010/02 1844	 05			MO	 1.7 5.6	7141308 (Z81095) A090635 BRWN CLAY SNDY 0004 BRWN SAND 0007
OTTAWA CITY ()	18 441032 5020342 W	2010/04 1844	 02			MO		7145546 (M05588) A090597 BRWN LOAM SAND SILT 0003 BRWN SAND SLTY GRVL 0008 GREY CLAY SLTY FGRD 0013 BRWN SAND CGRD 0025
OTTAWA CITY ()	18 441089 5020379 W	2010/03 1844	 02			MO		7146132 (M05578) A090629 0001 RED FILL GRVL CGRD 0004 BLCK PEAT 0008 GREY SILT CLYY SAND 0016 GREY SAND 0020
OTTAWA CITY ()	18 440773 5022160 W	2010/06 1844	 02		016 / / :0	MO		7150611 (M06764) A096578 BRWN LOAM 0000 BRWN SILT SAND GRVL 0000 GREY SILT CLAY SAND 0008 GREY WTHD 0022 GREY SAND SILT CLAY 0040
OTTAWA CITY ()	18 441805 5021064 W	2007/09 6838	 02	FR		TH	 13 10	7100811 (M00137) A056103 GREY ---- 0001 BRWN SAND GRVL 0007 GREY CLAY SILT SAND 0016 GREY SAND SILT GRVL 0023
OTTAWA CITY ()	18 441805 5021066 W	2010/08 6894						7150272 (M04989) A056103 P
OTTAWA CITY ()	18 441014 5020406 W	2010/07 1844	 05	0004		MO	 0 6	7150709 (Z81115) A096537 GREY CMTD 0001 BRWN SAND GRVL LOOS 0001 GREY CLAY SILT SAND 0004 GREY SILT CLAY SAND 0005 GREY SAND SILT CLAY 0006

TOWNSHIP CONCESSION (LOT)	UTM[1]	DATE[2] CNTR[3]	CASING DIA[4]	WATER[5,6] DETAIL	STAT LVL/PUMP LVL[7] RATE[8]/TIME HR:MIN	WATER USE[9]	SCREEN INFO[10]	WELL # (AUDIT#) WELL TAG # STATE[12] DEPTHS TO WHICH FORMATIONS EXTEND[5,11]
OTTAWA CITY (NEPEAN)	18 442851	1970/07		FR 0082	023 / 026			1510876 ()
OF 01(024)	5018592 W	1558	06 06	FR 0069	015 / 1:0	DO		MSND 0006 CLAY 0022 MSND 0058 HPAN 0060 GREY LMSN 0085

Notes:
1. UTM in Zone, Easting, Northing and Datum is NAD83; L: UTM estimated from Centroid of Lot; W: UTM not from Lot Centroid
2. Date Work Completed
3. Well Contractor Licence Number
4. Casing diameter in inches
5. Unit of Depth in Feet
6. See Table 4 for Meaning of Code
7. STAT LVL: Static Water Level in Feet ; PUMP LVL: Water Level After Pumping in Feet
8. Pump Test Rate in GPM, Pump Test Duration in Hour : Minutes
9. See Table 3 for Meaning of Code
10. Screen Depth and Length in feet
11. See Table 1 and 2 for Meaning of Code
12. A: Abandonment; P: Partial Data Entry Only

1. Core Material and Descriptive terms

Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
BLDR	BOULDERS	FCRD	FRACTURED	IRFM	IRON FORMATION	PORS	POROUS	SOFT	SOFT
BSLT	BASALT	FGRD	FINE-GRAINED	LIMY	LIMY	PRDG	PREVIOUSLY DUG	SPST	SOAPSTONE
CGRD	COARSE-GRAINED	FGVL	FINE GRAVEL	LMSN	LIMESTONE	PRDR	PREV. DRILLED	STKY	STICKY
CGVL	COARSE GRAVEL	FILL	FILL	LOAM	TOPSOIL	QRTZ	QUARTZITE	STNS	STONES
CHRT	CHERT	FLDS	FELDSPAR	LOOS	LOOSE	QSND	QUICKSAND	STNY	STONEY
CLAY	CLAY	FLNT	FLINT	LTCL	LIGHT-COLOURED	QTZ	QUARTZ	THIK	THICK
CLN	CLEAN	FOSS	FOSILIFEROUS	LYRD	LAYERED	ROCK	ROCK	THIN	THIN
CLYY	CLAYEY	FSND	FINE SAND	MARL	MARL	SAND	SAND	TILL	TILL
CMTD	CEMENTED	GNIS	GNEISS	MGRD	MEDIUM-GRAINED	SHLE	SHALE	UNKN	UNKNOWN TYPE
CONG	CONGLOMERATE	GRNT	GRANITE	MGVL	MEDIUM GRAVEL	SHLY	SHALY	VERY	VERY
CRYS	CRYSTALLINE	GRSN	GREENSTONE	MRBL	MARBLE	SHRP	SHARP	WBRG	WATER-BEARING
CSND	COARSE SAND	GRVL	GRAVEL	MSND	MEDIUM SAND	SHST	SCHIST	WDFR	WOOD FRAGMENTS
DKCL	DARK-COLOURED	GRWK	GREYWACKE	MUCK	MUCK	SILT	SILT	WTHD	WEATHERED
DLMT	DOLOMITE	GVLY	GRAVELLY	OBDN	OVERBURDEN	SLTE	SLATE		
DNSE	DENSE	GYPS	GYPSUM	PCKD	PACKED	SLTY	SILTY		
DRTY	DIRTY	HARD	HARD	PEAT	PEAT	SNDS	SANDSTONE		
DRY	DRY	HPAN	HARDPAN	PGVL	PEA GRAVEL	SNDY	SANDY		

2. Core Color

Code	Description
WHIT	WHITE
GREY	GREY
BLUE	BLUE
GREN	GREEN
YLLW	YELLOW
BRWN	BROWN
RED	RED
BLCK	BLACK
BLGY	BLUE-GREY

3. Water Use

Code	Description	Code	Description
DO	Domestic	OT	Other
ST	Livestock	TH	Test Hole
IR	Irrigation	DE	Dewatering
IN	Industrial	MO	Monitoring
CO	Commercial	MT	Monitoring & Test Hole
MN	Municipal		
PS	Public		
AC	Cooling And A/C		
NU	Not Used		

4. Water Detail

Code	Description	Code	Description
FR	Fresh	GS	Gas
SA	Salty	IR	Iron
SU	Sulphur		
MN	Mineral		
UK	Unknown		

APPENDIX M

Company Records

SUMMARY OF COMPANY RECORDS
1545 Woodroffe Avenue, Nepean, ON

Report Title	Prepared by:	Date	Scope
None provided for review			

APPENDIX N

Site Photographs

Convenience Store – Facing East

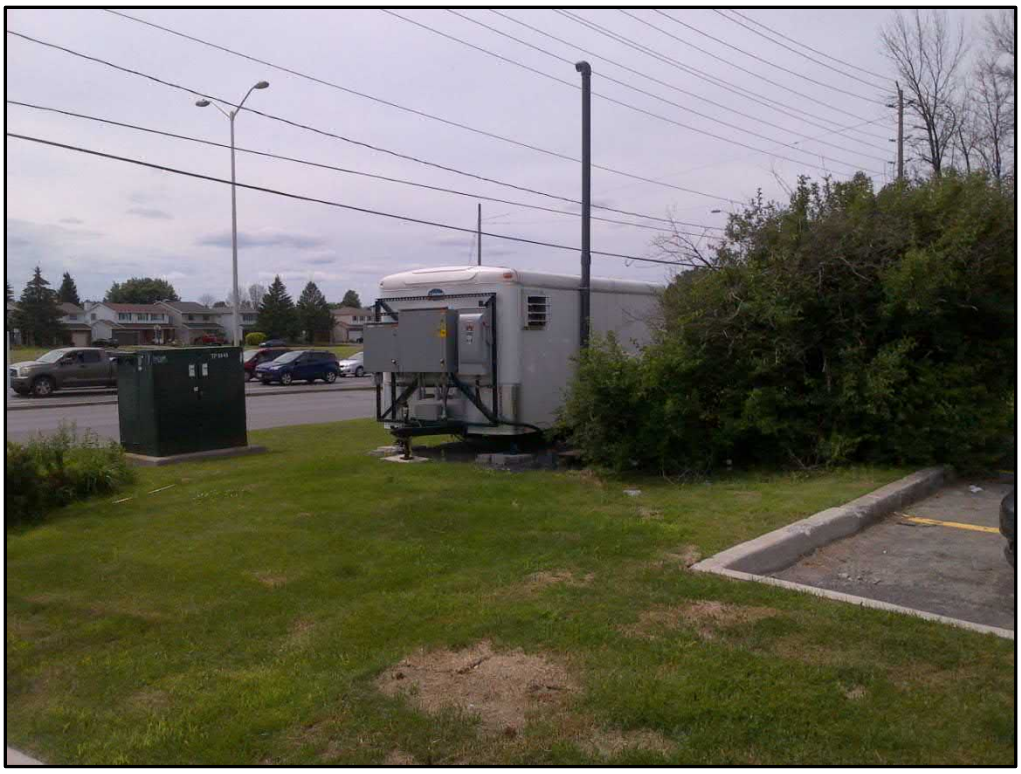
Pump Islands – Facing West

Car Wash Building – Facing East

Underground Storage Tanks

Car Wash Drain and Pit

Shed in East Portion of the Site



Possible In-situ Treatment System Trailer

Box Transformer on West Portion of the Site

Utility Meter Box Adjacent Northwest to Site Property Line

Pole Mounted Transformer Southwest of the Site Property Line

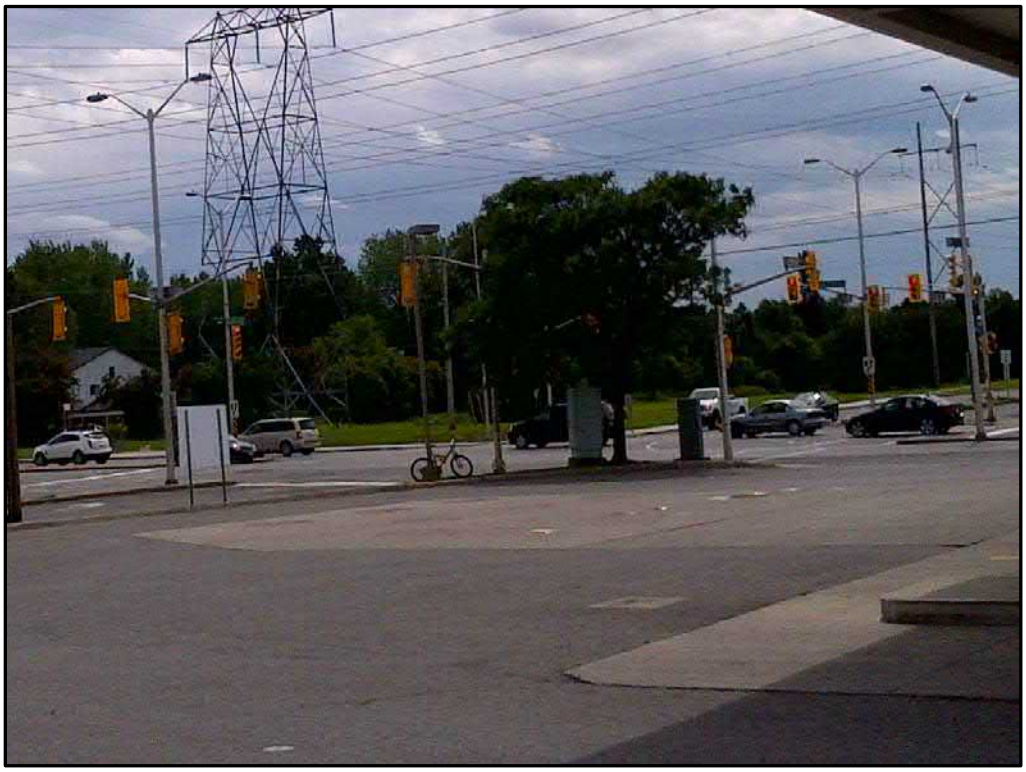
Box Transformer and Utility Box Southwest of the Site Property Line

Monitoring Well and Boreholes

Stressed and Dead Vegetation

Adjacent Property East of the Site

Adjacent Property South of the Site



Adjacent Property Southwest of the Site

Adjacent Property West of the Site

APPENDIX O

Sensitive Receptor Survey

ExxonMobil Sensitive Receptor Survey

Site ID or MRN: 302287

Facility Name: 88001626 (Name) | (ID Number) Service Stations Only

Location:

1545 WOODROFFE AVENUE (Street Address)

NEPEAN (City) | (County) | ON (State) | (Zip / Postcode)

(Latitude - Dec. Deg.) (Pos=North; Neg=South) | (Longitude-Dec. Deg) (Neg=West; Pos=East) | Canada (Country)

Receptor Information Complete? =Yes : =No

- General Site Information (this screen)
- Public Supply Wells
- Private Wells
- Surface Water / Wetlands
- Residential Buildings
- Public Use Areas
- Basements / Subgrade Parking
- Subways / Tunnels
- Sewers and Utility Corridors
- "Other" Receptors

Data entry is complete when all boxes are green

Required | Optional

Update | Reset

Data Entry Instructions:

1) Enter general site data on this screen

2) For each receptor identified, enter receptor data by clicking the Receptor Data buttons

3) Upon completion of form, click "Submit Site Record". All required data must be entered.

SRS Form	(Company)	(Contact Person)	(Date)
Prepared By:	SNC-LAVALIN INC.	MELANIE SIEWERT	7/20/2015
Updated By:			
Reviewed By:	ExxonMobil		

Ether Amended Fuels Status

Is this facility currently or likely in the future to handle ether amended fuels above deminimus levels (i.e., 0.5%) ? Important for URM Scoring — (●) Yes ( ) No

Groundwater Resources

General

Is groundwater within 1,500m of the site being used for drinking water?	(●) Yes ( ) No
If yes, is it considered a sole source aquifer[1]?	(●) Yes ( ) No
Is groundwater in the region used for irrigation or other non-potable uses?	(●) Yes ( ) No
Estimated depth to "first groundwater"[2] (includes perched GW):	1.2 m ☐ Unknown
Is the first groundwater located in limestone or fractured rock?	( ) Yes (●) No ( ) Unknown
Estimated depth to utilized aquifer (ie., with Public or Prive Wells)	6 m ( ) Not Applicable ( ) Unknown
Is the utilized regional aquifer located in limestone or fractured rock? Important for URM Scoring	( ) Yes (●) No ( ) Not Applicable ( ) Unknown

Public Water Supply Wells

Use local records and drive the area to identify well locations. Public Water Supply Wells include: i) All on-site wells, ii) "Municipal" wells owned by a public entity or utility for public water supply; iii) non-municipal "Special Consideration" wells serving much smaller populations (e.g. a housing development or apartment complex) or potentially sensitive users (e.g. a school, day-care facility, hospital, or nursing home); and iv) "Commercial Establishment/Other" wells, including any other non-residential drinking water well (e.g. providing service to restaurants, businesses including convenience stores associated with offsite service stations, or campgrounds).

Is a public water supply well(s)[4] located within 1500 meters of the site?	(●) Yes ( ) No
Number of public water supply wells within 1,500 meters[5]:	7

Private Water Wells

Use local records and drive the area to identify well locations, identify on local or regional map. Do not include monitoring/observation wells in your responses below.

Are there any regulations that prevent the installation of private water wells within 300 m?	( ) Yes ( ) No (●) Unknown
If yes, describe the regulations:	

Offsite Potable Private Water Wells

Are any *potable* private water wells located within 300 m of the site?	( ) Yes (●) No
Number of private *potable* offsite water wells within 300 m of the site:	

Offsite Non- Potable Private Water Wells

Are any *non-potable* private water wells located within 300 m of the site?	(●) Yes ( ) No
Number of private *non-potable* water wells within 300 m of the site:	1

Enter well data for the five closest offsite potable private water wells located within 300 m of the site, and the one closest offsite non-potable private water well located within 300 m of the site, enter well data and identify the well location on a map:

Surface Water Bodies and Wetlands

Is a surface water body, wetland, or specially designated environmental habitat[7] located within 300 m of the site? ( ) Yes (●) No

Number of surface water bodies, wetlands, or specially designated environmental habitats[7] within 300m of the site:	

Enter data for each surface water, wetlands, or ecological resource located within 300 m of the site, and identify the location on a map.

Residential Buildings

Are residential buildings located within 100 m of the site?	(•) Yes ( ) No
Number of residential buildings within 100 m of the site:	79

Enter data for the five closest *residential buildings located within 100 m of the site, and identify the location on a map:*

Public Use Areas

Is a Sensitive Public Use Area located within 100m of the site? (Including a hospital or medical clinic with overnight stay, nursing home, school, child care center, religious center, and any other public use area endorsed in advance as an exception by the Zone Asset Manager, the EMES Retail Manager, and the Global Asset Management Manager. Examples of items not included are medical or dental offices, playgrounds, and other recreational areas.)	( ) Yes (•) No
Number of public use areas within 100 m of the site:	

Enter data for each public use area located within 100 m of the site, and identify the location on a map:

Sub-Grade Structures

Basements or Below Grade Parking in Other Buildings

Do any other buildings located within 100 m of the site and not already identified above have basements or below grade parking?	( ) Yes (•) No
Number of basements or buildings with below grade parking within 100 m of the site:	

For the closest other building located within 100 m of the site and not already identified above, complete the following and identify the location on a local map:

Subways/Transportation Tunnels

Is there a subsurface mass transit system or tunnel located within 100 m of the site?	( ) Yes (•) No
Number of subways/tunnels within 100 m of the site:	

For each subway/tunnel located within 100 m of the site, complete the following and identify the location on a local map.

Sewers and Utility Corridors

Are there any storm or sanitary sewers or utility corridors that can act as preferential conduits for potential offsite migration?	(•) Yes ( ) No
Number of Sewers and Utility Corridors:	7

Enter data for each sewer located on or adjacent to the site, and identify the location on a map

"Other" Receptors

Do any other receptors or important facts not captured in this form, need to be identified?	( ) Yes (•) No
Describe below:	

Drawings (Optional)

If available, provide existing drawings. See details below of example content.

Onsite receptors identified on form

- ***Local Area Map or Aerial Photo (Site plus approximately 300 m in all directions)***

Offsite Public Wells	Surface Water Bodies	Wetlands	Sensitive Public Use Areas
Offsite Private Wells	Subways/Tunnels	Buildings	Other Receptors

- ***Regional Area Map (Site plus approximately 1,500 m in all directions)***

Offsite Public Wells	Topography	Major Surface Water Bodies

Notes:
1. Sole Source Aquifer: The groundwater unit must be designated as such by a regulatory authority or the groundwater unit that would be impacted by a release is the only source of drinking water for local users.
2. First Groundwater: The first (i.e., shallowest) groundwater-bearing unit encountered below ground surface; includes perched groundwater.
3. Utilized Regional Groundwater: A groundwater-bearing unit present at a site which is utilized for drinking water or other beneficial use (i.e., agriculture or industry).

(i.e., agriculture or industry).

4. Public Water Supply Wells: Include all on_site wells and both large community public wells for municipalities and smaller systems for housing developments, non-transient non-community public wells for schools, daycare centers, hospitals, and apartment complexes, and transient non-community public wells for restaurants and campgrounds.
5. For Public Water Supply and Private Well locations, use local records and drive the area to identify well locations.
6. Private Wells: Do not include monitoring or observation wells.
7. Specially designated environmental habitats: Include government-designated wildlife refuges, game preserves, marine sanctuaries, protected rivers, wildlife corridors, etc.

ExxonMobil Sensitive Receptor Survey **Site ID or MRN: 302287**

RECEPTOR DATA ANNEX

Groundwater Resources

Public Water Supply Wells

Well Number:	1	2	3	4	5
Well Identification:	1505084	1506020	1505082	1505083	1505088
Owner:	Unknown	Unknown	Unknown	Unknown	Unknown
Water Use:	Other	Other	Other	Other	Other
If other, describe:	Municipal	Municipal	Public	Public	Public
Type of Public Supply Well[1,2,3]:	Municipal	Municipal	Municipal	Municipal	Municipal
Active:	Unknown	Unknown	Unknown	Unknown	Unknown
Distance from the Site (m):	527.00	656.00	1253.00	1430.00	696.00
Direction From The Site:	NE	SW	E	NE	NE
Is site located over a Designated Source Water Protection Zone[4]:	Yes	Yes	Yes	Yes	Yes
If yes, provide the Protection Zone designation and description:	Intake protection zone	Intake protection zone	Intake protection zone	Intake protection zone	Intake protection zone
Topographically/Hydraulically downgradient:	Unknown	Unknown	Unknown	Unknown	Unknown
Approximate Capacity (m^3/hr):	Unknown	Unknown	Unknown	Unknown	Unknown
Screened Interval--Top (m, BGS):	Unknown	Unknown	Unknown	Unknown	Unknown
Screened Interval--Bottom (m, BGS):	Unknown	Unknown	Unknown	Unknown	Unknown
Well Screened in lower aquifer with >10m thick aquitard between shallow aquifer?	Unknown	Unknown	Unknown	Unknown	Unknown
Information Verified in Field or with Owner:	No	No	No	No	No

Private Water Wells

Well Number	1
Well Identification:	1506021
Owner:	Unknown
Street Address:	Unknown
Water Use:	Other
If other, describe:	Industrial
Active:	Unknown
Distance from the Site (m):	267
Direction From The Site:	NW
Topographically/Hyrdraulically Downgradient:	Unknown
Approximate Capacity (m^3/hr):	Unknown
Screened Interval--Top (m, BGS):	Unknown
Screened Interval--Bottom (m, BGS):	Unknown
Well Screened in lower aquifer with >10m thick aquitard between shallow aquifer?	Unknown
Information Verified in Field or with Owner:	No

ExxonMobil Sensitive Receptor Survey **MRN Number:** 302287

RECEPTOR DATA ANNEX

Groundwater Resources

Public Water Supply Wells

Well Number:	6	7
Well Identification:	1505388	1506019
Owner:	Unknown	Unknown
Water Use:	Other	Other
If other, describe:	Public	Public
Type of Public Supply Well[1,2,3]:	Municipal	Municipal
Active:	Unknown	Unknown
Distance from the Site (m):	1369.00	694.00
Direction From The Site:	NE	SW
Is site located over a Designated Source Water Protection Zone[4]:	Yes	Yes
If yes, provide the Protection Zone designation and description:	Intake protection zone	Intake protection zone
Topographically/Hydraulically downgradient:	Unknown	Unknown
Approximate Capacity (m^3/hr):	Unknown	Unknown
Screened Interval--Top (m, BGS):	Unknown	Unknown
Screened Interval--Bottom (m, BGS):	Unknown	Unknown
Well Screened in lower aquifer with >10m thick aquitard between shallow aquifer?	Unknown	Unknown
Information Verified in Field or with Owner:	No	No

Private Water Wells

Well Number
Well Identification:
Owner:
Street Address:
Water Use:
If other, describe:
Active:
Distance from the Site (m):
Direction From The Site:
Topographically/Hyrdraulically Downgradient:
Approximate Capacity (m^3/hr):
Screened Interval--Top (m, BGS):
Screened Interval--Bottom (m, BGS):
Well Screened in lower aquifer with >10m thick aquitard between shallow aquifer?
Information Verified in Field or with Owner:

ExxonMobil Sensitive Receptor Survey

Site ID or MRN: 302287

RECEPTOR DATA ANNEX

Surface Water Bodies and Wetlands

Surface Water Body Number:	
Name:	
Potable Use:	
Type of Resource:	
Uses of Surface Water Body:	
Distance from Site to Resource (m):	
Direction from Site to Resource:	
Information Verified in Field:	

Residential Buildings

Residential Building Number:	1	2	3	4	5
Type of Residential Building:	Single Family	Single Family	Single Family	Single Family	Single Family
Owner:	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated Occupancy:	< 10	< 10	< 10	< 10	< 10
Distance from Site to Residential Building (m):	10	10	10	10	10
Direction from Site to Residential Building:	N	N	N	N	N
Topographically/Hydraulically Downgradient:	Unknown	Unknown	Unknown	Unknown	Unknown
Basement Present in Residential Building:	Yes	Yes	Yes	Yes	Yes
Below Grade Parking Present in Residential Building:	Unknown	Unknown	Unknown	Unknown	Unknown
Water Supply Source for Residential Building:	Public Supply	Public Supply	Public Supply	Public Supply	Public Supply
Information Verified in Field:	No	No	No	No	No

Public Use Areas

Public Use Area Number:	
Name:	
Type of Public Use Area:	
Distance from Site to Public Use Area (m):	
Direction from Site to Public Use Area:	
Topographically/Hydraulically Downgradient:	
Basement present in Public Use Building:	
Below Grade Parking Present in Public Use Building:	
Likely to have a sump in Basement or Below Grade Parking:	
Water Supply Source for Public Use Area:	
Information Verified in Field:	

ExxonMobil Sensitive Receptor Survey | **Site ID or MRN:** 302287

RECEPTOR DATA ANNEX

Sub-Grade Structures

Basements or Below Grade Parking in Other Buildings
Basement or Below Grade Parking Number:
Type of Other Building:
If other, describe:
Type of Subsurface Structure:
Likely to have a sump in Basement:
Distance from Site to Other Building (m):
Topographically/Hydraulically Downgradient:
Information Verified in Field:

Subways/Transportation Tunnels
Subway / Tunnel Number:
Description:
Direction from Site to Subway / Tunnel:
Is Subway / Tunnel Topographically / Hydraulically downgradient from Site:
Information Verified in Field:

Sewers and Utility Corridors

Sewer or Utility Corridor Number:	1	2	3	4	5
Type:	Storm Sewer	Sanitary Sewer	Electric	Telephone	Gas
Perimeter Location:	W	W	W	W	W
Depth to base (bottom) of Sewer / Utility Corridor:	Unknown	Unknown	Unknown	Unknown	Unknown
Information Verified in Field:	Yes	Yes	Yes	No	No

ExxonMobil Sensitive Receptor Survey | **MRN Number:** 302287

RECEPTOR DATA ANNEX

Sub-Grade Structures

Basements or Below Grade Parking in Other Buildings

Basement or Below Grade Parking Number:	
Type of Other Building:	
If other, describe:	
Type of Subsurface Structure:	
Likely to have a sump in Basement:	
Distance from Site to Other Building (m):	
Topographically/Hydraulically Downgradient:	
Information Verified in Field:	

Subways/Transportation Tunnels

Subway / Tunnel Number:	
Description:	
Direction from Site to Subway / Tunnel:	
Is Subway / Tunnel Topographically / Hydraulically downgradient from Site:	
Information Verified in Field:	

Sewers and Utility Corridors

Sewer or Utility Corridor Number:	6	7
Type:	Water	Other: Cable
Perimeter Location:	W	W
Depth to base (bottom) of Sewer / Utility Corridor:	Unknown	Unknown
Information Verified in Field:	No	No

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 IN OTHER THAN ITS ORIGINAL SIZE AND COLOURS
3. 'm' : METRES

SOURCE(S):
1. NATURAL RESOURCES CANADA, ELECTRONIC TOPOGRAPHIC MAP, http://atlas.nrcan.gc.ca/site/english/toporama/index.html
2. MOE WATER WELL RECORDS (UTM NAD83, ZONE 18)

LEGEND
- SITE PROPERTY LINE
- 100m FROM PERIMETER OF SUBJECT SITE
- 300m FROM PERIMETER OF SUBJECT SITE
- 1500m FROM PERIMETER OF SUBJECT SITE
- RESIDENTIAL PROPERTY IDENTIFIED FOR SRS
- SENSITIVE PUBLIC USE AREAS PROPERTY IDENTIFIED FOR SRS
- DOMESTIC USE WATER WELL
- INDUSTRIAL USE WATER WELL
- UNKNOWN USE WATER SUPPLY WELL
- ABANDONED/NOT IN USE WATER SUPPLY WELL
- COMMERCIAL USE WATER SUPPLY WELL
- IRRIGATION USE WATER SUPPLY WELL
- LIVESTOCK USE WATER SUPPLY WELL
- MUNICIPAL USE WATER SUPPLY WELL
- PUBLIC USE WATER SUPPLY WELL
- WATER WELL (MONITORING/TEST HOLE/ OBSERVATION)
- DEWATERING WATER SUPPLY WELL
- COOLING & A/C WATER SUPPLY WELL

SCALE 1:7500
0 100 200 400m

SNC·LAVALIN

Client/Location: IMPERIAL OIL 1545 WOODROFFE AVENUE OTTAWA, ON		Title: MOE WATER WELL RECORD LOCATION PLAN	
Project No: 628494	Filename: 04SWM-628494-1.DWG	Date: JULY 2015	Dwg No: APPENDIX O
Drawn: EM	Verified: MS	Project Manager: MS	

PAGE FORMAT: 22x34

K:\Active_P\Imperial Oil\2015 Phase 1 EAs Burnett\628494-04S Burnett A.E.S Execution\A.E Working Version\04S 1545 WOODROFFE AVE, KEYSAW\04S_ACAD\04S-628494-1.dwg

SNC·LAVALIN
20 DeBoers Drive, Suite 200
Toronto (Ontario) Canada, M3J 0H1
Tel.: (416) 635-5882
Fax: (416) 635-5353
www.snclavalin.com

PHASE II ENVIROMNENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE (AT MEDHURST DRIVE)
OTTAWA, ONTARIO

Submitted to:

Imperial Oil Limited
90 Wynford Drive
Toronto, Ontario M3C 1K5

Submitted by:

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.

3715 Laird Road, Suite 100 West
Mississauga, Ontario L5L 0A3
Phone: (905) 820-1210
Fax: (905) 820-1221

Prepared by: David Kantor, P.Eng. **Reviewed by: Gerry Parrott, P.Geo.**

October 13, 2009

O'Connor Reference No.: 10-8518L00

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

These documents and the information contained therein are confidential property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-83, c.111, Sch.II"1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch.I"1", as such legislation may be amended from time to time.

SUMMARY

Location: 1545 Woodroffe Avenue (at Medhurst Drive), Ottawa, Ontario	Details
Type of Facility	Active retail fuel outlet
Municipal Zoning	Main Parcel: GM15H(9.5) - General Mixed-Use zone, subzone 15, height restriction of 8 m Triangular parcel on the north side of the Site: RTDWW – Residential Third Density zone, subzone WW
Date(s) of Soil Sampling	November 17 to 18, 2008
Date(s) of Groundwater Sampling	December 11, 2008
Number of Test Pits Advanced	0
Number of Boreholes Drilled	7
Number of Wells Installed in Boreholes	7
Type of Organic Vapour Meter Used	Gastechtor 1238ME or RKI EAGLE
Adjacent Land Use	North (residences), East (residences), South (Medhurst Drive), West (Woodroffe Avenue)
Aquifer Usage in 100 m radius	None
Reference Standards	MOE Table 3 Site Condition Standards (medium and fine textured soils, industrial/commercial/community land use)

SUMMARY OF BOREHOLES DRILLED:

Description	BH1	BH2	BH3	BH4	BH5	BH6	BH7
Well Installed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Depth (mbgs)	5.9	4.4	6.1	6.1	4.6	6.1	5.9
Dominant Soil Type	Clay and Sand	Clay and Sand	Clay and Sand	Clay and Sand	Sand, Gravel and Clay	Sand and Clay	Clay and Sand
Depth to Water Table (mbgs)	Dry	3.402	4.946	5.038	4.130	5.226	3.672
Screened Interval (mbgs)	1.8 to 4.3	1.5 to 4.3	4.6 to 6.1	4.6 to 6.1	1.8 to 4.6	4.6 to 6.1	1.9 to 4.7
Free Product Thickness (mm)	0	0	0	0	0	0	<1
Exceeded Soil Reference Standards	Yes	No	Yes	No	No	No	No
Exceeded Groundwater Reference Standards	No	No	No	No	No	No	Yes
Vertical Soil Impact Delineation Achieved	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes:

mbgs – metres below ground surface

N/A – not applicable or not available

MOE – Ontario Ministry of the Environment

TABLE OF CONTENTS

Page

SUMMARY ..... **i**

1.0 INTRODUCTION **1**
1.1 Background **1**
1.2 Scope of Work **1**

2.0 ACTIVITIES **2**
2.1 Day-Lighting **2**
2.2 Borehole Drilling **2**
2.3 Monitoring Well Installation **2**
2.4 Soil Sampling **3**
2.5 Groundwater Monitoring and Sampling **3**
2.6 Laboratory Analyses **4**
2.7 Surveying **5**
2.8 Hydraulic Conductivity Testing **5**

3.0 FINDINGS **5**
3.1 Field Observations **5**
3.1.1 Stratigraphy ***5***
3.1.2 Site Hydrogeology ***5***
3.1.3 Liquid Hydrocarbons ***6***
3.1.4 Soil and Monitoring Well Vapour Concentrations ***7***
3.2 Selected Site Condition Standards **7**
3.3 Soil Analytical Results **8**
3.4 Groundwater Analytical Results **8**

4.0 SUMMARY AND CONCLUSIONS **9**

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE **10**

LIST OF TABLES:

Table I	**Monitoring Well Construction Details**
Table II	**Potentiometric Surface Depths and Elevations**
Table III	**Measured Free Product Thickness**
Table IV	**Monitoring Well Vapour Concentrations**
Table V	**Soil Analytical Results – Petroleum-Related Parameters and Lead**
Table VI	**Soil Analytical Results – Inorganic Parameters**
Table VII	**Soil Analytical Results – Waste Classification Parameters**
Table VIII	**Groundwater Analytical Results – Petroleum-Related Parameters and Lead**

LIST OF DRAWINGS:

Drawing No. 1	**Site Location and Regional Topography**
Drawing No. 2	**Site Plan and Surrounding Land Use**
Drawing No. 3	**Elevation of the Potentiometric Surface for Wells Screened in Clay – December 11, 2008**
Drawing No. 4	**Elevation of the Potentiometric Surface for Wells Screened in Sand – December 11, 2008**
Drawing No. 5	**Current Soil Analytical Results**
Drawing No. 6	**Current Groundwater Analytical Results**

APPENDICES:

Appendix A	**Borehole Logs**
Appendix B	**Grain Size Distribution Analytical Results**
Appendix C	**Maxxam Analytics Laboratory Certificates of Analysis**
Appendix D	**MOE Well Registration Record**
Appendix E	**Hydraulic Conductivity Data Sheets**

1.0 INTRODUCTION

O'Connor Associates Environmental Inc. was retained by Imperial Oil Limited to conduct a Phase II environmental site assessment (ESA) at the active Imperial Oil petroleum retail outlet and carwash located at 1545 Woodroffe Avenue in Ottawa, Ontario (the Site).

The purpose of the ESA was to assess soil and groundwater quality at the Site and provide some geotechnical information in anticipation of the re-location of the on-Site underground fuel storage tanks (USTs). The fieldwork was conducted between November 17 and December 12, 2008.

1.1 Background

The Site location and regional topographic features are shown on Drawing No. 1. A Site plan, also showing surrounding land use, is presented as Drawing No. 2.

The Site has been used as a service station since the early 1960s, before which time the land was used for agricultural purposes. The service repair garage location was moved in the 1980s and in 1993 was converted to a Tim Hortons restaurant. The Site is currently an active petroleum retail outlet with a convenience store, a carwash and a Tim Hortons restaurant. There are five gasoline USTs and one diesel UST, fuel dispensers and associated lines on-Site. Land use beyond the retail outlet consists of roadways and residences.

1.2 Scope of Work

The ESA involved the following main tasks:

- Advance seven boreholes in the vicinity of the USTs and fuel dispensers and install monitoring wells.
- Collect soil samples from the boreholes for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), petroleum hydrocarbons (PHC) fractions F1 to F4, lead, pH, and grain size.
- Monitor all on-Site wells for subsurface vapour concentrations, water levels and presence of liquid hydrocarbons.
- Collect groundwater samples for laboratory analysis of BTEX, PHC fractions F1 to F4, and lead.
- Prepare a report summarizing the investigation activities and findings.

- Prepare a separate report summarizing the geotechnical information and recommendations.

2.0 ACTIVITIES

Prior to proceeding with the Phase II ESA, a health and safety meeting was conducted and various utility representatives and a private utility locating contractor identified underground utility locations on November 14, 2008. In addition, Farley, Smith and Denis Surveying was retained by O'Connor Associates to mark out the property lines and establish a local survey benchmark.

All field procedures were conducted in accordance with the Ontario Ministry of the Environment (MOE) document entitled *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (1996), or MOE draft *Guideline for Phase II Environmental Site Assessments in Ontario* (March 22, 2006), and generally accepted industry practices.

2.1 Day-Lighting

Veolia Environmental Services was retained by O'Connor Associates to day-light the boreholes. The boreholes were day-lighted on November 17 and 18, 2008 using a vacuum excavator to depths ranging from 2.1 m to 2.4 m below ground surface (bgs).

2.2 Borehole Drilling

George Downing Estate Drilling was retained by O'Connor Associates to advance the seven boreholes (BH1 to BH7) in the vicinity of the USTs and fuel dispensers. The borehole locations are shown on Drawing No. 2. These boreholes were advanced to depths ranging from 4.3 m to 6.1 m using a CME 55 truck-mounted hollow-stem auger rig on November 17 and 18, 2008.

2.3 Monitoring Well Installation

Monitoring wells, each consisting of a 50 mm diameter PVC screen and an un-slotted riser, were installed in the newly advanced boreholes. The wells installed in BH1, BH2, BH5, and BH7 were screened only in the upper clay layer, and the wells installed in BH3, BH4, and BH6 were screened only in the underlying sand layer. The annular space between the PVC well and the borehole wall was backfilled to approximately 0.3 m above the top of the screen with silica sand, and then with bentonite pellets to approximately 0.1 m below grade. Each monitoring well was then finished with a casing set flush with grade and emplaced in concrete grout to protect the wells from damage.

Monitoring well installation details are presented in Table I and on the borehole logs in Appendix A. The MOE well record is presented in Appendix D.

2.4 Soil Sampling

Soil sampling was conducted at regular depth intervals in each borehole using a hand auger or split-spoon sampler. The hand augers and split-spoons were washed prior to collection of each soil sample. The samples were collected from each device using a clean trowel and nitrile gloves. Each soil sample was immediately split and one portion of the sample was sealed in a clean plastic bag for field screening which included determining textural description, evidence of impact (e.g., staining or free product), and soil sample headspace vapour concentration. The remainder of the sample was promptly placed in containers supplied by the laboratory and stored in coolers with ice for possible analysis.

The soil vapour concentrations were measured using a combustible gas detector (Gastech Model 1238ME or RKI EAGLE) having a minimum detection level of 5 parts per million (ppm). The gas detector was operated in the methane elimination mode and calibrated each day with known concentrations of n-hexane.

Soil sampling details are presented on the borehole logs in Appendix A.

Typically, two samples from each borehole were selected for laboratory analyses, based on sample location and/or field screening results. The samples were stored in coolers with ice prior to and during shipping to the laboratory.

The soil Quality Assurance and Quality Control (QA/QC) samples submitted to the laboratory included one duplicate sample from the boreholes.

2.5 Groundwater Monitoring and Sampling

All of the new wells were monitored on December 11, 2008 for groundwater levels, the presence or absence of light non-aqueous phase liquids (“free product”), and monitoring well vapour concentrations. The depth to the water table and presence/absence of free product in the wells were determined with an electronic interface probe. The vapour concentrations were measured approximately 0.5 m below grade in the monitoring wells with the combustible gas detector.

Groundwater samples were collected from all accessible on-Site monitoring wells on December 11, 2008. Prior to collecting the groundwater samples, the wells were initially purged using low-flow

purging methods until pH, conductivity and temperature readings were stable (within 10% of one another) and allowed to recover. Subsequently, the boreholes screened only in the sand material (BH3, BH4, and BH6) were purged using standard purging methods until three standing well water volumes were removed, or until the wells were dry and allowed to recover.

Subsequent to the completion of the low-flow purging, the initial groundwater samples were collected using polyethylene tubing that was individually dedicated to each monitoring well. The remaining water samples from BH3 and BH4 (identified as BH3W and BH4W to differentiate them from samples collected from BH3 and BH4 following low-flow purging) were collected using bailers or Waterra foot valves and polyethylene tubing that were individually dedicated to each monitoring well. No groundwater samples were collected from BH6 because a petroleum hydrocarbon sheen had been detected in this well.

The groundwater samples were collected in containers supplied by the laboratory and stored in coolers with ice prior to and during shipment to the laboratory.

The groundwater QA/QC samples submitted to the laboratory included one field duplicate sample, one field blank, and one trip blank.

2.6 Laboratory Analyses

The soil and groundwater samples collected from the boreholes were submitted for laboratory analyses of BTEX, PHC fractions F1 to F4, and lead. A total of 14 soil samples and seven groundwater samples, excluding QA/QC samples, were submitted for analysis.

To facilitate disposal of the drill cuttings, a composite soil sample was submitted for toxicity characteristic leaching procedure analysis.

These laboratory analyses were conducted by Maxxam Analytics Inc. under contract to Imperial Oil. Maxxam is accredited by the Standards Council of Canada for the testing of all parameters listed in Ontario Regulation 153/04 under the Environmental Protection Act. Analytical methods used by the laboratory are referenced in the Certificates of Analysis presented in Appendix C. Analytical procedures were conducted in accordance with the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (2004).

Selected soil samples were also submitted for grain size distribution analysis and pH to confirm the soil texture and applicable MOE site conditions standards.

2.7 Surveying

On November 19, 2008 all of the boreholes were surveyed horizontally relative to existing Site features. In addition, the elevations of the tops of the well pipes and the ground surface were surveyed relative to the established benchmark.

2.8 Hydraulic Conductivity Testing

To estimate hydraulic conductivities of the aquifer materials, bail tests were conducted at BH2 to BH7 from December 10 to 12, 2008. Rising–head tests were conducted at each location using a 1 L bailer. A level logger programmed to record readings at three second intervals for BH2 and BH7, and half second intervals for BH3, BH4, and BH6 was used to record the water level data, supplemented by manual measurements. A barologger programmed to record barometric pressure during the bail tests was installed in BH5.

3.0 FINDINGS

3.1 Field Observations

3.1.1 Stratigraphy

The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of asphalt, sand fill, sandy clay and silt, and sand. Detailed stratigraphic descriptions are presented on the borehole logs in Appendix A.

3.1.2 Site Hydrogeology

In the wells screened only in the upper clay layer, the water table was encountered at 3.4 m to 4.1 m bgs (elevations of 85.1 m to 84.7 m) on December 11, 2008, with the average being 3.7 m bgs (elevation of 85.0 m). In the wells screened only in the underlying sand layer, the water table was encountered at 4.9 m to 5.2 m bgs (elevations of 83.66 m to 84.69 m) on December 11, 2008, with the average being 5.1 m bgs (elevation of 83.68 m). The underlying sand layer would be considered unconfined as the potentiometric surface in the wells screened in the sand was detected within the sand layer. The potentiometric surface depths below ground surface and the calculated potentiometric elevations are presented in Table II. The groundwater potentiometric elevations are contoured on Drawings No. 3 and No. 4. As indicated, the inferred principal directions of groundwater flow in the clay and sand layers were to the southwest and to the north, respectively.

The results of the bail tests are summarized in the table below. The hydraulic conductivity values (K) were calculated using the computer software AQTESOLV and the Bouwer-Rice method for unconfined aquifer conditions. The data sheets generated by AQTESTOLV are presented in Appendix E. The results for the bail tests conducted in the wells screened in the clay and sand layers are consistent with literature values (Fetter, 1992) for clay and well-sorted sand, respectively.

Location	Lithology	Hydraulic Conductivity (m/s)
BH3	coarse to medium sand	8.5×10^{-5}
BH4	coarse to medium sand	2.5×10^{-4}
BH6	coarse to medium sand	1.4×10^{-4}
Geometric Mean	-	1.6×10^{-4}
BH7	clay	1.7×10^{-8}

For the sand, assuming a porosity (n) of 0.3, a hydraulic gradient (i) of 0.029 (calculated from BH3 to BH6) and a hydraulic conductivity (q) of 1.6×10^{-4} m/s, the average linear velocity (Vavg) of the groundwater is estimated to be approximately 1.5×10^{-5} m/s or 488 m/yr (Vavg = qi/n).

For the clay, assuming a porosity (n) of 0.6, a hydraulic gradient (i) of 0.029 (calculated from BH7 to BH5) and a hydraulic conductivity (q) of 1.7×10^{-8} m/s, the average linear velocity (Vavg) of the groundwater is estimated to be approximately 8.2×10^{-10} m/s or 0.026 m/yr (Vavg = qi/n).

3.1.3 Liquid Hydrocarbons

The free product thicknesses measured in the monitoring wells on December 11, 2008 are presented in Table III. As indicated, a petroleum hydrocarbon sheen was observed on the water from BH6 during the monitoring and purging conducted on December 11, 2008. Free product was not encountered in any of the other wells during the monitoring conducted on December 11, 2008.

3.1.4 Soil and Monitoring Well Vapour Concentrations

Soil vapour concentrations measured in the soil samples recovered from the boreholes are presented on the logs in Appendix A. The concentrations ranged from not detected (<5 ppm) to greater than 100% of the lower explosive limit (LEL).

The monitoring well vapour concentrations measured on December 11, 2008 are presented in Table IV. As indicated, the concentrations ranged from 175 ppm to greater than 100% LEL.

3.2 Selected Site Condition Standards

Ontario Regulation 153/04 provides two optional approaches for environmental assessment and, if required, remediation of property in Ontario: the use of site condition standards or preparation of a site-specific risk assessment. For the current investigation, the approach to use site condition standards was selected.

The Site would not be considered environmentally sensitive, based on the following:

- The Site is not within or adjacent to an area of natural significance.
- A soil sample pH value was not less than 5 and not greater than 11.
- The bedrock surface is more than 2 m deep below more than two-thirds of the Site area.

Consequently, the full depth generic site condition standards were selected for use. The following additional conditions were deemed applicable:

- Non-potable groundwater condition, as the Site and nearby properties are supplied by the City of Ottawa municipal water supply system, which obtains water from the Ottawa River.
- Medium and fine textured soils, as determined by the borehole logs and grain size analyses presented in Appendices A and B, respectively, which collectively indicated that less than one-third of the subsoil in the samples collected contains more than 50 percent of particles at least 75 um in diameter.
- Industrial/commercial/community property use, as the current and intended future use of the Site is commercial.

Based on the above discussion, the MOE (2004) Table 3 full depth generic site condition standards for commercial/industrial/community land use and medium and fine textured soils were selected for comparison with the soil and groundwater analytical results.

3.3 Soil Analytical Results

The soil analytical results for BTEX, PHC fractions F1 to F4, and lead are presented and compared to the applicable MOE Table 3 standards in Table V. As indicated, all results met the standards, with the exception of xylenes and PHC fraction F1 in BH1 at 3.0 m bgs, and PHC fraction F1 in BH3 at 3.0 m bgs.

The soil analytical results are presented on Drawing No. 5.

The soil analytical result for pH is presented and compared to the applicable MOE Table 3 standard in Table VI. As indicated, the pH of the soil met the standard.

The composite soil sample submitted for leachate analysis met the referenced Schedule 4 criteria and would be classified as non-hazardous waste under Ontario Regulation 347 (as amended, including Ontario Regulation 558). The waste classification analytical results are presented in Table VII.

The three soil grain size distribution analytical results indicated that the upper soil layers were predominantly fine textured, and the underlying soil layers were predominantly coarse textured. The analytical results are presented in Appendix B.

The laboratory certificates of analysis are included in Appendix C.

3.4 Groundwater Analytical Results

The groundwater analytical results for BTEX, PHC fractions F1 to F4, and lead are presented and compared to the applicable MOE Table 3 standards in Table VIII. Analytical results for BH3W and BH4W correspond to the groundwater samples submitted for laboratory analysis following standard purging procedures. As indicated, all results met the standards. However, the free product observed on the water from BH6 during monitoring and purging (reported in Section 3.1.3) would be considered an exceedance of the standards. There are no site conditions standards for PHC fractions F1 to F4.

The groundwater analytical results are presented on Drawing No. 6.

The laboratory certificates of analysis are included in Appendix C.

4.0 SUMMARY AND CONCLUSIONS

During this subsurface investigation, seven boreholes were advanced with monitoring wells. Soil and groundwater samples from these boreholes were submitted for laboratory analysis of BTEX, PHC fractions F1 to F4, and lead.

The results of the investigation are summarized as follows:

1. The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of asphalt, sand fill, sandy clay and silt, and sand.

2. In the wells screened only in the upper clay layer, the water table was encountered at 3.4 m to 4.1 m bgs on December 11, 2008, with the average being 3.7 m bgs. In the wells screened only in the underlying sand layer, the water table was encountered at 4.9 m to 5.2 m bgs on December 11, 2008, with the average being 5.1 m bgs. The underlying sand layer would be considered unconfined. The inferred principal directions of groundwater flow in the clay and sand layers were to the southwest and to the north, respectively.

3. The hydraulic conductivity values for the clay and sand layers were 1.7×10^{-8} m/s and 1.4×10^{-4} m/s, respectively, which are consistent with clay and well-sorted sand, respectively.

4. The MOE (2004) Table 3 full depth generic site condition standards for commercial/industrial/community land use and medium and fine textured soils were selected for comparison with the soil and groundwater analytical results.

5. All soil sample analytical results satisfied the MOE (2004) Table 3 site condition standards, with the exception of xylenes and PHC fraction F1 in BH1 at 3.0 m bgs, and PHC fraction F1 in BH3 at 3.0 m bgs.

6. All groundwater sample analytical results satisfied the MOE (2004) Table 3 site condition standards. However, a petroleum sheen was observed on the water from BH6 during monitoring and purging. There are no site condition standards for PHC fractions F1 to F4.

7. The composite soil sample submitted for waste classification analysis met the referenced Schedule 4 criteria and would be classified as non-hazardous waste.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc. for Imperial Oil. It is intended for the sole and exclusive use of Imperial Oil, its affiliated companies and partners and their respective (insurers), agents, employees and advisors (collectively, Imperial Oil). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and O'Connor Associates make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates. Nothing in this report is intended to constitute or provide a legal opinion.

Respectfully submitted,

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.

David Kantor, P.Eng.

Gerry Parrott, P.Geo.

DWK:dsk

Distribution: (2) Imperial Oil Ltd. (w/cd)

TABLE I

MONITORING WELL CONSTRUCTION DETAILS

BOREHOLE	MONITORING WELL DEPTH (m) bgs	SCREEN INTERVAL (m) bgs	TOP OF PIPE ELEVATION (m)	GROUND SURFACE ELEVATION (m)
BH1	4.343	1.8 - 4.3	88.506	88.612
BH2	4.257	1.5 - 4.3	83.333	88.508
BH3	5.969	4.6 - 6.1	88.500	88.634
BH4	5.958	4.6 - 6.1	88.618	88.718
BH5	4.466	1.8 - 4.6	88.787	88.854
BH6	6.027	4.6 - 6.1	88.768	88.885
BH7	4.654	1.9 - 4.7	88.865	88.936

bgs - below ground surface

TABLE II

POTENTIOMETRIC SURFACE DEPTHS AND ELEVATIONS

	BH1		BH2		BH3		BH4		BH5		BH6		BH7	
DATE	DEPTH bgs (m)	ELEVATION (m)	DEPTH bgs (m)	ELEVATION (m)	DEPTH bgs (m)	ELEVATION (m)	DEPTH bgs (m)	ELEVATION (m)	DEPTH bgs (m)	ELEVATION (m)	DEPTH bgs (m)	ELEVATION (m)	DEPTH bgs (m)	ELEVATION (m)
2008/12/11	DRY	DRY	3.402	85.106	4.946	83.688	5.038	83.680	4.130	84.724	5.226	83.659	3.672	85.264

bgs - below ground surface

TABLE III

MEASURED FREE PRODUCT THICKNESS
(mm)

DATE	BH1	BH2	BH3	BH4	BH5	BH6	BH7
2008/12/11	0	0	0	0	0	<1	0

TABLE IV

MONITORING WELL VAPOUR CONCENTRATIONS
(ppm unless noted as %LEL)

DATE	BH1	BH2	BH3	BH4	BH5	BH6	BH7
2008/12/11	45%	175	>100%	5%	20%	>100%	225

TABLE V (Page 1 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS							STANDARD
	BH1	BH1	BH2	QA1 Duplicate-BH2	BH2	BH3	BH3	
Depth (m)	3.05	5.94	3.66	3.66	4.42	3.05	5.94	TABLE 3[a]
Date Sampled	2008/11/17	2008/11/17	2008/11/17	2008/11/17	2008/11/17	2008/11/18	2008/11/18	
Soil Vapour Concentration (ppm or % LEL)	>100%	ND	5%	5%	5%	100%	5%	NV
Moisture Content (%)	21	15	31	34	25	18	20	NV
Benzene	6.4	<0.02	<0.02	<0.02	<0.02	2.6	0.05	25
Toluene	96	0.03	<0.02	<0.02	<0.02	48	0.22	150
Ethylbenzene	54	0.02	<0.02	<0.02	<0.02	39	0.10	1000
m,p-Xylenes	210	0.08	<0.04	<0.04	<0.04	140	0.35	NV
o-Xylene	80	0.03	<0.02	<0.02	<0.02	58	0.17	NV
Total Xylenes	**290**	0.10	<0.04	<0.04	<0.04	200	0.52	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	**790**	<10	<10	<10	<10	**1000**	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	230	<10	<10	<10	16	81	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	<10	<10	<10	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	<10	<10	<10	6600
Petroleum Hydrocarbons F4 (gravimetric)	-	-	-	-	-	-	-	6600
Lead	<5	<5	<5	5	7	<5	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NV - No value
ND - Not Detectecd
- - Not available
BOLD - Exceeds selected criterion.

O'CONNOR ASSOCIATES

TABLE V (Page 2 of 2)

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g or ppm, dry weight)

PARAMETER	SAMPLE LOCATIONS								STANDARD
	BH4	BH4	BH5	BH5	BH6	BH6	BH7	BH7	
Depth (m)	2.29	6.1	3.67	4.42	0.97	5.94	2.36	5.94	TABLE 3[a]
Date Sampled	2008/11/17	2008/11/17	2008/11/18	2008/11/18	2008/11/18	2008/11/18	2008/11/18	2008/11/18	
Soil Vapour Concentration (ppm or % LEL)	125	5	70%	5%	125	10%	125	25	NV
Moisture Content (%)	21	16	30	31	14	16	35	15	NV
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	25
Toluene	<0.02	<0.02	0.05	0.06	<0.02	<0.02	<0.02	<0.02	150
Ethylbenzene	<0.02	<0.02	8.8	5.3	<0.02	0.15	<0.02	0.03	1000
m,p-Xylenes	<0.04	<0.04	31	18	<0.04	0.54	<0.04	<0.04	NV
o-Xylene	<0.02	<0.02	1.7	0.73	<0.02	0.10	<0.02	<0.02	NV
Total Xylenes	<0.04	<0.04	33	19	<0.04	0.64	<0.04	<0.04	210
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	210	92	<10	<10	<10	<10	660
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	110	46	<10	<10	<10	<10	1500
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	<10	97	<10	50	<10	2500
Petroleum Hydrocarbons F4 (>C34)	<10	<10	<10	<10	12	<10	160	<10	6600
Petroleum Hydrocarbons F4 (gravimetric)	-	-	-	-	-	-	780	-	6600
Lead	<5	5	<5	6	37	<5	15	<5	1000

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004).
Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NV - No value
ND - Not Detectecd
- - Not available
BOLD - Exceeds selected criterion.

O'CONNOR ASSOCIATES

TABLE VI

SOIL ANALYTICAL RESULTS
INORGANIC PARAMETERS
(µg/g or ppm, dry weight)

PARAMETER

PARAMETER	SAMPLE LOCATIONS	STANDARD
	BH5	TABLE 3[a]
Depth (m)	3.05	
Date Sampled	2008/11/18	
pH	7.89	5.0 to 11.0 subsurface soil

a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004). Full depth generic site condition standards in a non-potable groundwater condition: industrial/commercial/community land use, medium and fine textured soils.

TABLE VII

SOIL ANALYTICAL RESULTS
WASTE CLASSIFICATION PARAMETERS
(mg/L unless noted otherwise)

PARAMETER PARAMETER	SAMPLE LOCATION TCLP 2008/11/18	REG. 558 SCHEDULE 4 STANDARD[a]
Ignitability	NI	NIL
Leachate:		
Inorganics		
Arsenic	<0.2	2.5
Barium	0.7	100
Boron	<0.1	500
Cadmium	<0.05	0.5
Chromium	<0.1	5.0
Cyanide	<0.002	20.0
Fluoride	0.2	150.0
Lead	<0.1	5.0
Mercury	<0.001	0.1
Nitrate + Nitrite (as Nitrogen)	<0.1	1000
Selenium	<0.2	1.0
Silver	<0.01	5.0
Uranium	<0.01	10.0
Organics		
1,1-Dichloroethylene	<0.01	1.4
1,2-Dichlorobenzene	<0.02	20.0
1,2-Dichloroethane	<0.02	0.5
1,4-Dichlorobenzene	<0.02	0.5
2,3,4,6-Tetrachlorophenol	<0.0025	10.0
2,4,5-Trichlorophenol	<0.0005	400.0
2,4,6-Trichlorophenol	<0.0025	0.5
2,4-Dinitrotoluene	<0.0025	0.13
Benzene	0.01	0.5
Benzo[a]pyrene	<0.0001	0.001
Carbon Tetrachloride	<0.01	0.5
Chlorobenzene	<0.01	8.0
Chloroform	<0.01	10.0
m/p-Cresol	<0.0025	200.0
o-Cresol	<0.0025	200.0
Hexachlorobenzene	<0.01	0.13
Hexachloroethane	<0.01	3.0
Methyl ethyl ketone	<0.5	200.0
Methylene Chloride	<0.05	5.0
Nitrobenzene	<0.01	2.0
Pentachlorophenol	<0.0025	6.0
Pyridine	<0.01	5.0
Tetrachloroethylene	<0.01	3.0
Trichloroethylene	<0.01	5.0
Vinyl Chloride	<0.02	0.2

a - Schedule 4 of Ontario Reg. 558 under the Environmental Protection Act, September 2000.
NI -Not ignitable

TABLE VIII

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/L)

PARAMETER	SAMPLE LOCATIONS								STANDARD
	BH2	BH3	QA1 Duplicate-BH3	BH3W	BH4	BH4W	BH5	BH7	TABLE 3[a]
Date Sampled	2008/12/11	2008/12/11	2008/12/11	2008/12/11	2008/12/11	2008/12/11	2008/12/11	2008/12/11	
Benzene	0.6	320	390	290	<0.2	<0.2	41	<0.2	12000
Toluene	1.0	63	57	25	<0.2	<0.2	61	1.3	37000
Ethylbenzene	0.7	190	230	120	<0.2	<0.2	2500	0.8	50000
m&p-Xylene	1.2	120	420	180	<0.4	<0.4	8100	3.4	NV
o-Xylene	2.2	360	120	72	<0.2	<0.2	390	1.8	NV
Total Xylenes	3.4	490	540	250	<0.4	<0.4	8500	5.2	35000
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<100	700	<1000	510	<100	<100	9100	<100	NV
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	160	140	160	<100	<100	1200	<100	NV
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	<100	<100	<100	<100	<100	<100	<100	NV
Petroleum Hydrocarbons F4 (>C34)	<100	<100	<100	<100	<100	<100	<100	<100	NV
Lead	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	32

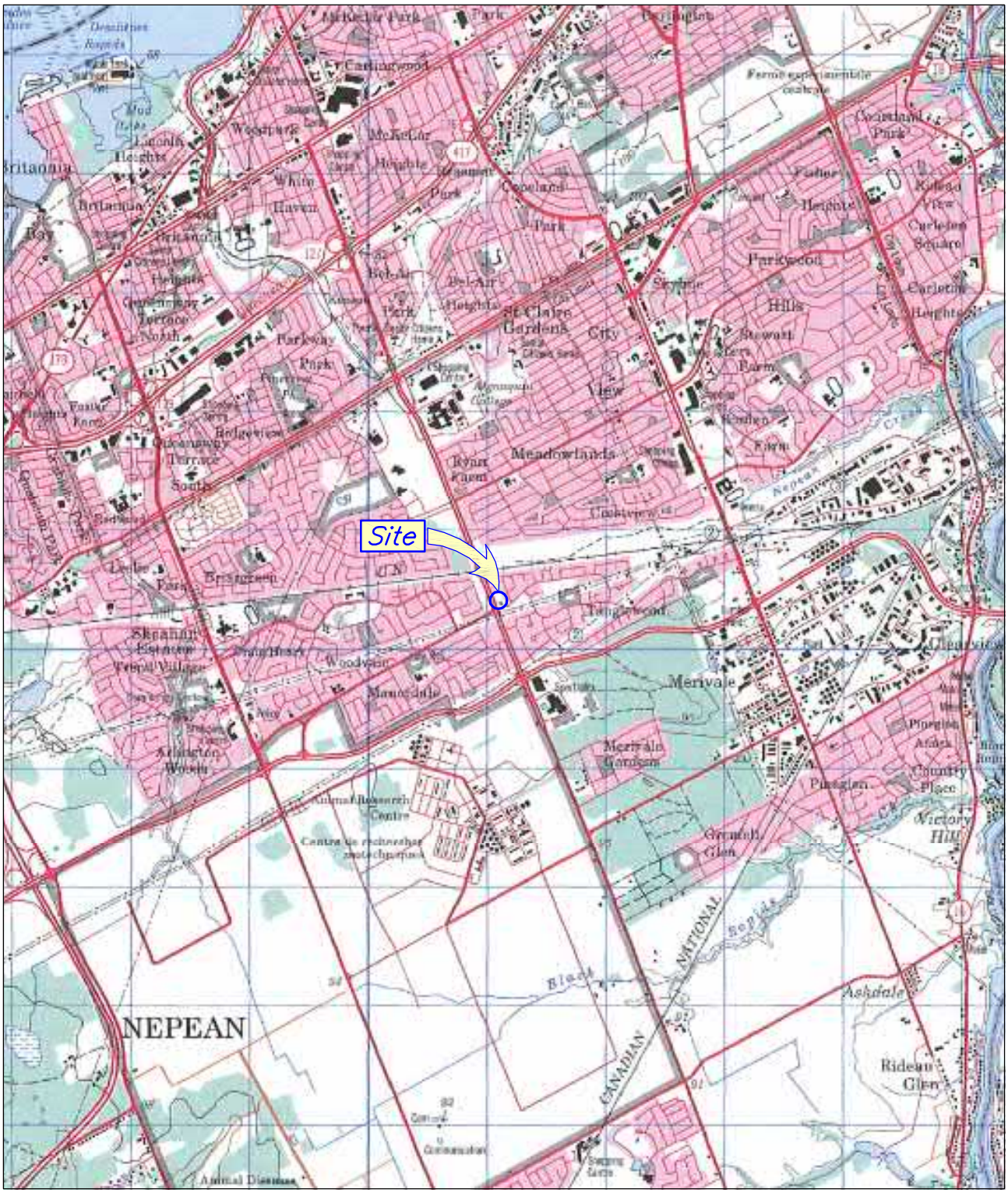
a - Ontario Ministry of the Environment Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004). Full depth generic site condition standards in a non-potable groundwater condition: medium and fine textured soils.

b - BTEX have been subtracted from the fraction.

c - Naphthalene has not been subtracted from the fraction.

d - PAHs have not been subtracted from the fraction.

NV - No value



Reference: Canada Centre for Mapping, Ottawa, Map No. 31 G/5, Edition 11, 1994.

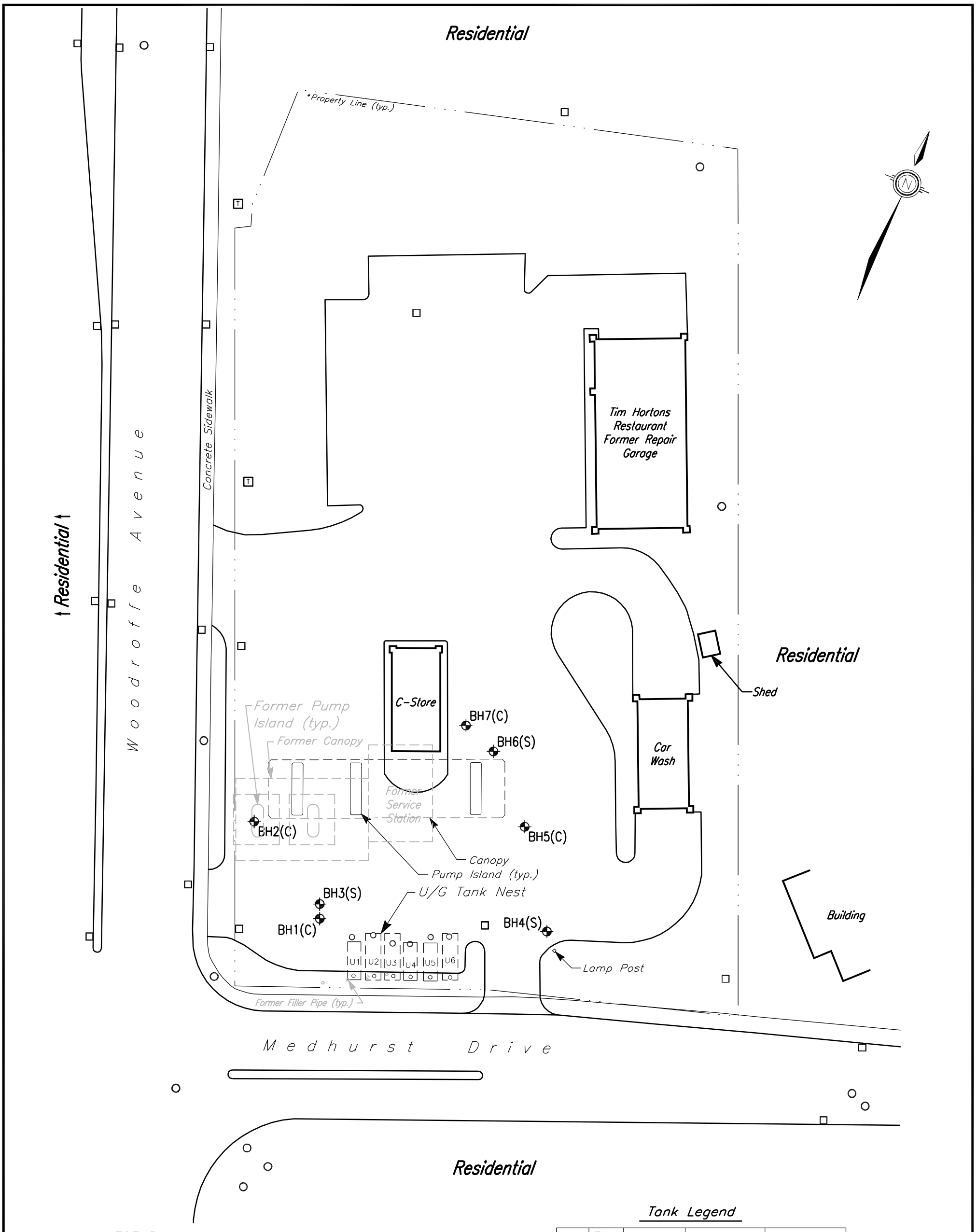
0 0.5 1.0 1.5 2.0 2.5 3.0km

Scale 1:50,000

Site Location and Regional Topography
1545 Woodroffe Avenue
Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8518L00	DATE: 2009/10/13
FILE NO.: 8518T003	DWG. NO.: 1



LEGEND

- Manhole
- Catch Basin
- Transformer (Pad Mounted)
- Borehole (with Monitoring Well) BH1 to BH7 by O'Connor 2008
  - (S) Screened in Sand
  - (C) Screened in Clay

Tank Legend

Tank	Type	Capacity	Product	Status
U1	UST	13 600 L	Gasoline	Active
U2	UST	22 700 L	Gasoline	Active
U3	UST	22 700 L	Gasoline	Active
U4	UST	13 600 L	Diesel	Active
U5	UST	13 600 L	Gasoline	Active
U6	UST	22 700 L	Gasoline	Active

* – Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

0 5 10 15 20 25m

Original Scale 1:500

Site Plan and Surrounding Land Use
1545 Woodroffe Avenue
Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8518L00	DATE: 2009/10/13
FILE NO.: 8518S006	DWG. NO.: 2

Residential

*Property Line (typ.)

Residential

Woodroffe Avenue

Concrete Sidewalk

Tim Hortons
Restaurant
Former Repair
Garage

Former Pump
Island (typ.)

Former Canopy

C-Store

BH7(C)
85.264

BH6(S)
[83.659]

85.25

85.20

85.15

85.10

85.05

85.00

84.95

84.90

84.85

84.80

84.75

Former
Service
Station

85.106
BH2(C)

84.724
BH5(C)

Canopy

Pump Island (typ.)

U/G Tank Nest

BH3(S)
[83.688]
DRY
BH1(C)

BH4(S)
[83.680]

U1 U2 U3 U4 U5 U6

Former Filler Pipe (typ.)

Lamp Post

Shed

Car
Wash

Residential

Building

Medhurst Drive

Residential

Residential

LEGEND

- Manhole
- Catch Basin
- T Transformer (Pad Mounted)
- Borehole (with Monitoring Well)
  BH1 to BH7 by O'Connor 2008
  - (S) Screened in Sand
  - (C) Screened in Clay
- Inferred Direction of Groundwater Flow
- [ ] Value not Used in Contouring

NOTE: Contouring based on Surfer® linear kriging computer modelling.

0 5 10 15 20 25m

Original Scale 1:500

* – Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

Tank Legend

Tank	Type	Capacity	Product	Status
U1	UST	13 600 L	Gasoline	Active
U2	UST	22 700 L	Gasoline	Active
U3	UST	22 700 L	Gasoline	Active
U4	UST	13 600 L	Diesel	Active
U5	UST	13 600 L	Gasoline	Active
U6	UST	22 700 L	Gasoline	Active

Elevation of the Potentiometric Surface
For Wells Screened in Clay – (m)
2008/12/11
1545 Woodroffe Avenue, Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.:	10-8518L00	DATE:	2009/10/13
FILE NO.:	8518M007	DWG. NO.:	3

Residential

*Property Line (typ.)

Residential

Woodroffe Avenue

Concrete Sidewalk

Tim Hortons
Restaurant
Former Repair
Garage

Former Pump
Island (typ.)

Former Canopy

C-Store

BH7(C)
[85.264]

BH6(S)
83.659

83.662
83.664
83.666
83.668
83.670
83.672
83.674
83.676
83.678
83.680
83.682
83.684
83.686
83.688

[85.106]
BH2(C)

[84.724]
BH5(C)

Canopy

Pump Island (typ.)

U/G Tank Nest

BH3(S)
83.688
DRY
BH1(C)

BH4(S)
83.680

U1 U2 U3 U4 U5 U6

Former Filler Pipe (typ.)

Residential

Shed

Car
Wash

Lamp Post

Building

Medhurst Drive

Residential

LEGEND

- Manhole
- Catch Basin
- T Transformer (Pad Mounted)
- Borehole (with Monitoring Well)
  BH1 to BH7 by O'Connor 2008
  - (S) Screened in Sand
  - (C) Screened in Clay
- Inferred Direction of Groundwater Flow
- [ ] Value not Used in Contouring

NOTE: Contouring based on Surfer® linear kriging computer modelling.

0 5 10 15 20 25m

Original Scale 1:500

* – Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

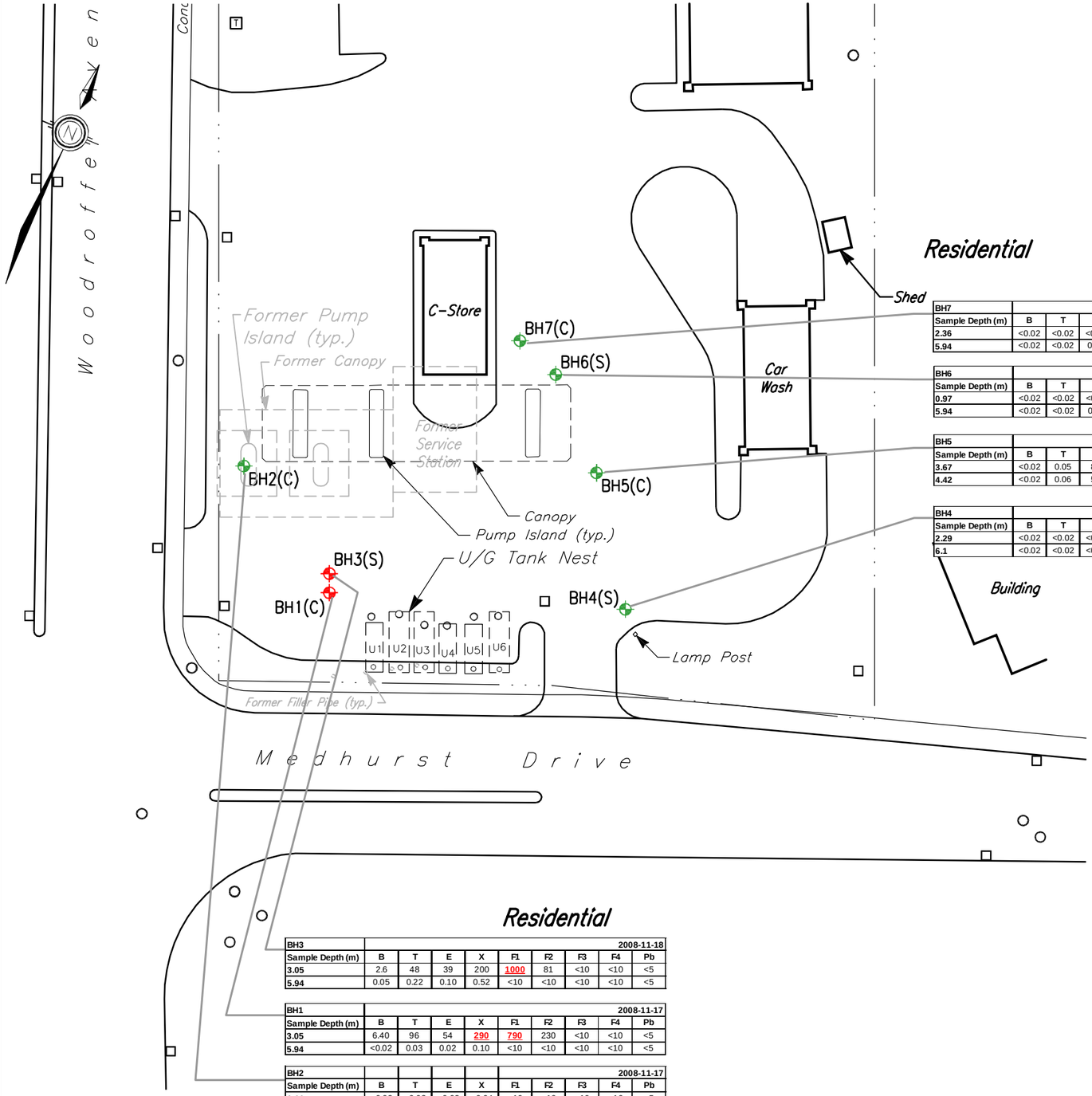
Tank Legend

Tank	Type	Capacity	Product	Status
U1	UST	13 600 L	Gasoline	Active
U2	UST	22 700 L	Gasoline	Active
U3	UST	22 700 L	Gasoline	Active
U4	UST	13 600 L	Diesel	Active
U5	UST	13 600 L	Gasoline	Active
U6	UST	22 700 L	Gasoline	Active

Elevation of the Potentiometric Surface
For Wells Screened in Sand – (m)
2008/12/11
1545 Woodroffe Avenue, Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.:	10-8518L00	DATE:	2009/10/13
FILE NO.:	8518M008	DWG. NO.:	4



Residential

BH7										2008-11-18
Sample Depth (m)	B	T	E	X	F1	F2	F3	F4	Pb	
2.36	<0.02	<0.02	<0.02	<0.04	<10	<10	50	780	15	
5.94	<0.02	<0.02	0.03	<0.04	<10	<10	<10	<10	<5	

BH6										2008-11-18
Sample Depth (m)	B	T	E	X	F1	F2	F3	F4	Pb	
0.97	<0.02	<0.02	<0.02	<0.04	<10	<10	97	12	37	
5.94	<0.02	<0.02	0.15	0.64	<10	<10	<10	<10	<5	

BH5										2008-11-18
Sample Depth (m)	B	T	E	X	F1	F2	F3	F4	Pb	
3.67	<0.02	0.05	8.8	33	210	110	<10	<10	<5	
4.42	<0.02	0.06	5.3	19	92	46	<10	<10	6	

BH4										2008-11-17
Sample Depth (m)	B	T	E	X	F1	F2	F3	F4	Pb	
2.29	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<5	
6.1	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	5	

Residential

BH3										2008-11-18
Sample Depth (m)	B	T	E	X	F1	F2	F3	F4	Pb	
3.05	2.6	48	39	200	1000	81	<10	<10	<5	
5.94	0.05	0.22	0.10	0.52	<10	<10	<10	<10	<5	

BH1										2008-11-17
Sample Depth (m)	B	T	E	X	F1	F2	F3	F4	Pb	
3.05	6.40	96	54	290	790	230	<10	<10	<5	
5.94	<0.02	0.03	0.02	0.10	<10	<10	<10	<10	<5	

BH2										2008-11-17
Sample Depth (m)	B	T	E	X	F1	F2	F3	F4	Pb	
3.66	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<5	
3.66 (QA1)	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	5	
4.42	<0.02	<0.02	<0.02	<0.04	<10	16	<10	<10	7	

* – Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

LEGEND

- Manhoole
- Catch Basin
- T Transformer (Pad Mounted)
- Borehole (with Monitoring Well) BH1 to BH7 by O'Connor 2008
  - (S) Screened in Sand
  - (C) Screened in Clay

Analytical Results

- Location where results met referenced standard (shown in green)
- Location where results exceeded referenced standard (shown in red)
- 1000 Result Exceeds Referenced Standard
- < Result Less Than Detection Limit

SHOWN AS	PARAMETER	UNITS	MOE Table 3* Standard
B	Benzene	µg/L	25
T	Toluene	µg/L	150
E	Ethylbenzene	µg/L	1000
X	Total Xylenes	µg/L	210
F1	PHC (C6 - C10) - BTEX	µg/L	660
F2	PHC (>C10 - C16)	µg/L	1500
F3	PHC (>C16 - C34)	µg/L	2500
F4	PHC (>C34 - C50+)	µg/L	6600
Pb	Lead	µg/L	1000

* For non-potable groundwater conditions, industrial /commercial/community land use and medium and fine textured soils.

PHC Petroleum hydrocarbons

Tank Legend

Tank	Type	Capacity	Product	Status
U1	UST	13 600 L	Gasoline	Active
U2	UST	22 700 L	Gasoline	Active
U3	UST	22 700 L	Gasoline	Active
U4	UST	13 600 L	Diesel	Active
U5	UST	13 600 L	Gasoline	Active
U6	UST	22 700 L	Gasoline	Active

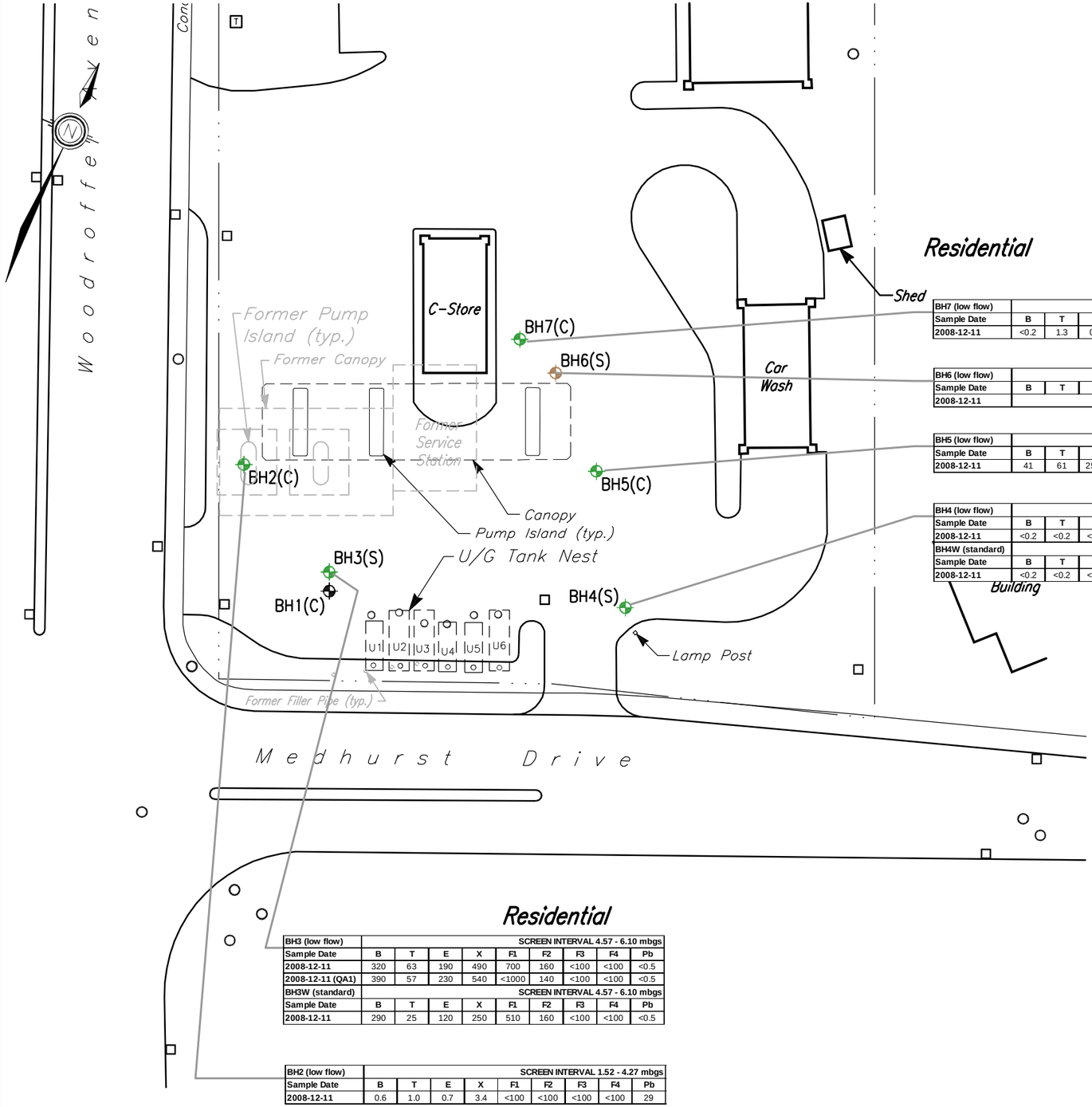
0 5 10 15 20 25m

Original Scale 1:500

Current Soil Analytical Results
1545 Woodroffe Avenue, Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8518L00	DATE: 2009/10/14
FILE NO.: 8518B016	DWG. NO.: 5



Residential

BH7 (low flow)	SCREEN INTERVAL 1.95 - 4.69 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	<0.2	1.3	0.8	5.2	<100	<100	<100	<100	1.0

BH6 (low flow)	SCREEN INTERVAL 4.57 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	Free Product <1 mm								

BH5 (low flow)	SCREEN INTERVAL 1.83 - 4.57 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	41	61	2500	8500	9100	1200	<100	<100	<0.5

BH4 (low flow)	SCREEN INTERVAL 4.15 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5
BH4W (standard)	SCREEN INTERVAL 4.15 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5

Residential

BH3 (low flow)	SCREEN INTERVAL 4.57 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	320	63	190	490	700	160	<100	<100	<0.5
2008-12-11 (QA1)	390	57	230	540	<1000	140	<100	<100	<0.5
BH3W (standard)	SCREEN INTERVAL 4.57 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	290	25	120	250	510	160	<100	<100	<0.5

BH2 (low flow)	SCREEN INTERVAL 1.52 - 4.27 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	0.6	1.0	0.7	3.4	<100	<100	<100	<100	29

* – Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

LEGEND

- Manhole
- Catch Basin
- T Transformer (Pad Mounted)
- Borehole (with Monitoring Well) BH1 to BH7 by O'Connor 2008
  - (S) Screened in Sand
  - (C) Screened in Clay

Analytical Results

- Location where results met referenced standard (shown in green)
- Location where a result exceeded referenced standard (shown in red)
- Location where free product was encountered (shown in brown)
- <1 mm Free Product, Observed Thickness
- < Result Less Than Detection Limit
- mbgs Metres Below Ground Surface

SHOWN AS	PARAMETER	UNITS	MOE Table 3* Standard
B	Benzene	µg/L	12000
T	Toluene	µg/L	37000
E	Ethylbenzene	µg/L	50000
X	Total Xylenes	µg/L	35000
F1	PHC (C6 - C10) - BTEX	µg/L	NV
F2	PHC (>C10 - C16)	µg/L	NV
F3	PHC (>C16 - C34)	µg/L	NV
F4	PHC (>C34 - C50+)	µg/L	NV
Pb	Lead	µg/L	32

* For non-potable groundwater conditions, industrial/commercial/community land use and medium and fine textured soils.

PHC Petroleum hydrocarbons

NV No value

Tank Legend

Tank	Type	Capacity	Product	Status
U1	UST	13 600 L	Gasoline	Active
U2	UST	22 700 L	Gasoline	Active
U3	UST	22 700 L	Gasoline	Active
U4	UST	13 600 L	Diesel	Active
U5	UST	13 600 L	Gasoline	Active
U6	UST	22 700 L	Gasoline	Active

0 5 10 15 20 25m

Original Scale 1:500

Current Groundwater Analytical Results
1545 Woodroffe Avenue, Ottawa, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8518L00	DATE: 2009/10/13
FILE NO.: 8518G017	DWG. NO.: 6

APPENDIX A

BOREHOLE LOGS

PROJECT: Environmental Site Assessment	TPC ELEV.: 88.506 m	BOREHOLE NO: **BH1**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	GRADE ELEV.: 88.612 m	JOB NO: 10-8518L00
CLIENT: Imperial Oil Limited	START DATE: 2008/11/17	DRILL: CME-55/HS Auger

SAMPLE TYPE SS - SPLIT SPOON ST - SHELBY TUBE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m)	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft)
0	ASPHALT											
	SAND - olive brown to brown, coarse to medium grained, some gravel, damp		1	DC						Monitoring Well Dry on 2008/12/11		
	CLAY and SILT - olive brown to dark brown, sandy, trace gravel, damp		2	DC								
1			3	DC								5
	- dark gray, petroleum odour below 1.8 m		4	DC								
2	- soft below 2.0 m		5	SS	4	100						
	- sand lens at 2.7 m		6	SS	3	100	BH1-3.05m / BTEX, PHC F1-F4, Lead					10
3	- very soft below 3.0 m		7	SS	1	100	Grain Size					
	- soft below 3.8 m		8	SS	3	100						
4	SAND - light gray, coarse to medium grained, trace silt, moist, medium dense											15
			9	SS	12	100	Grain Size					
5			10	SS	15	100	BH1-5.94m / BTEX, PHC F1-F4, Lead					
6	END OF HOLE AT 5.9 m									Monitoring Well Installed to 4.3 m, 50 mm Dia. PVC Pipe, Screened from 1.8 m to 4.3 m		20
7												
8												25
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: SMD	COMPLETION DEPTH: 5.9 m
REVIEWED BY: DWK	COMPLETION DATE: 2008/11/17
	Page 1 of 1

OAEI REPORT LOG 15 8518L00.GPJ SOIL LOG.GDT 09/10/13

PROJECT: Environmental Site Assessment	TPC ELEV.: 88.333 m	BOREHOLE NO: **BH2**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	GRADE ELEV.: 88.508 m	JOB NO: 10-8518L00
CLIENT: Imperial Oil Limited	START DATE: 2008/11/17	DRILL: CME-55/HS Auger

SAMPLE TYPE SS - SPLIT SPOON ST - SHELBY TUBE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) / Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) / Water Level
0	ASPHALT											
	SAND - dark brown, medium to fine grained, some gravel, trace silt, damp		1	DC				▲				
	SILT AND CLAY - dark brown, sandy, trace gravel, damp		2	DC				▲				
1			3	DC				▲				5
	- gray below 1.8 m		4	DC				▲				
2												
	- gray, wet, petroleum odour, black staining, soft below 2.6 m		5	SS	4	100		▲				
3	- sand lens at 2.7 m - very soft below 3.0 m											10
	- sand lens at 3.1 m - wet below 3.2 m		6	SS	1	100	BH2-3.66m / BTEX, PHC F1-F4, Lead		◆	Potentiometric Elevation on 2008/12/11		
4			7	SS	1	25	BH2-4.42m / BTEX, PHC F1-F4, Lead		◆			
	END OF HOLE AT 4.4 m									Monitoring Well Installed to 4.3 m, 50 mm Dia. PVC Pipe, Screened from 1.5 m to 4.3 m		15
5												
6												20
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: SMD	COMPLETION DEPTH: 4.4 m
REVIEWED BY: DWK	COMPLETION DATE: 2008/11/17
	Page 1 of 1

OAEI REPORT LOG 15 8518L00.GPJ SOIL LOG.GDT 09/10/13

PROJECT: Environmental Site Assessment	TPC ELEV.: 88.500 m	BOREHOLE NO: **BH3**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	GRADE ELEV.: 88.634 m	JOB NO: 10-8518L00
CLIENT: Imperial Oil Limited	START DATE: 2008/11/18	DRILL: CME-55/HS Auger

SAMPLE TYPE SS - SPLIT SPOON ST - SHELBY TUBE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) Water Level
0	ASPHALT											
	SAND - olive brown to brown, coarse to medium grained, some gravel, moist		1	DC								
	CLAY and SILT - olive brown to dark brown, sandy, trace gravel, moist		2	DC								
1			3	DC								5
2			4	DC								
	CLAY AND SAND - olive brown to dark brown, silty, moist, loose, petroleum odour, black staining		5	SS	5	100	BH3-3.05m / BTEX, PHC F1-F4, Lead		◆			
3	- very soft below 3.0 m		6	SS	2	100			◆			10
	CLAY and SILT - dark gray, wet											
	- black staining from 3.8 m to 4.1 m		7	SS	1	100			◆			
4	SAND - dark gray, coarse to medium grained, trace silt, moist, medium dense											15
5 ▼			8	SS	15	100		▲		Potentiometric Elevation on 2008/12/11		▼
	- dark gray to light brown, wet below 5.3 m		9	SS	14	100	BH3-5.94m / BTEX, PHC F1-F4, Lead		◆			
6	END OF HOLE AT 6.1 m									Monitoring Well Installed to 6.1 m, 50 mm Dia. PVC Pipe, Screened from 4.6 m to 6.1 m		20
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: SMD	COMPLETION DEPTH: 6.1 m
REVIEWED BY: DWK	COMPLETION DATE: 2008/11/18
	Page 1 of 1

OAEI REPORT LOG 15 8518L00.GPJ SOIL LOG.GDT 09/10/13

PROJECT: Environmental Site Assessment	TPC ELEV.: 88.618 m	BOREHOLE NO: **BH4**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	GRADE ELEV.: 88.718 m	JOB NO: 10-8518L00
CLIENT: Imperial Oil Limited	START DATE: 2008/11/17	DRILL: CME-55/HS Auger

SAMPLE TYPE SS - SPLIT SPOON ST - SHELBY TUBE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) Water Level
0	ASPHALT											
	CLAY and SILT - dark brown, sandy, some gravel, moist		1	DC								
			2	DC								
1												
	SAND - dark brown, coarse to medium grained, silty, clayey, some gravel, moist		3	DC								
2			4	DC			BH4-2.29m / BTEX, PHC F1-F4, Lead					
	CLAY and SILT - gray, sandy, moist, firm		5	SS	7	100	Grain Size					
	- sand lens at 2.5 m											
3	- very soft below 3.0 m											
	- wet below 3.3 m; sand lens at 3.3 m		6	SS	1	100						
	- firm below 3.8 m											
4			7	SS	6	100						
	SAND - light gray, coarse grained, trace silt, moist, medium dense											
5 ▼			8	SS	11	100				Potentiometric Elevation on 2008/12/11		
	- dark gray below 5.1 m											
	- wet below 5.3 m		9	SS	10	100	BH4-6.1m / BTEX, PHC F1-F4, Lead					
6	- light brown below 5.9 m											
	END OF HOLE AT 6.1 m									Monitoring Well Installed to 6.1 m, 50 mm Dia. PVC Pipe, Screened from 4.6 m to 6.1 m		
7												
8												
9												
10												

O'CONNOR ASSOCIATES

LOGGED BY: SMD	COMPLETION DEPTH: 6.1 m
REVIEWED BY: DWK	COMPLETION DATE: 2008/11/17
	Page 1 of 1

OAEI REPORT LOG 15 8518L00.GPJ SOIL LOG.GDT 09/10/13

PROJECT: Environmental Site Assessment	TPC ELEV.: 88.787 m	BOREHOLE NO: **BH5**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	GRADE ELEV.: 88.854 m	JOB NO: 10-8518L00
CLIENT: Imperial Oil Limited	START DATE: 2008/11/18	DRILL: CME-55/HS Auger

SAMPLE TYPE SS - SPLIT SPOON ST - SHELBY TUBE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE OS - OTHER

'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND PEA GRAVEL SLOUGH GROUT DRILL CUTTINGS SAND/GRAVEL BENTONITE / CONCRETE

Depth (m) Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) Water Level
0	ASPHALT											
	GRAVEL - dark brown, medium to fine grained, some sand, trace silt, moist		1	DC				▲				
			2	DC				▲				
1												
	SAND - dark brown, fine grained, silty, clayey to 2.6 m, trace gravel, moist		3	DC				▲				
2												
	- light gray, medium to fine grained, firm, petroleum odour below 2.6 m		4	SS	7	100	pH	▲				
3	CLAY and SILT - dark gray, sandy, wet, soft, black staining		5	SS	3	100	BH5-3.67m / BTEX, PHC F1-F4, Lead		◆			
	- sand lens at 3.5 m - dark gray, wet, very soft below 3.6 m											
4 ▼			6	SS	1	25	BH5-4.42m / BTEX, PHC F1-F4, Lead		◆	Potentiometric Elevation on 2008/12/11		
	END OF HOLE AT 4.6 m									Monitoring Well Installed to 4.6 m, 50 mm Dia. PVC Pipe, Screened from 1.8 m to 4.6 m		
5												15
6												20
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: SMD	COMPLETION DEPTH: 4.6 m
REVIEWED BY: DWK	COMPLETION DATE: 2008/11/18
	Page 1 of 1

OAEI REPORT LOG 15 8518L00.GPJ SOIL LOG.GDT 09/10/13

PROJECT: Environmental Site Assessment	TPC ELEV.: 88.768 m	BOREHOLE NO: **BH6**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	GRADE ELEV.: 88.885 m	JOB NO: 10-8518L00
CLIENT: Imperial Oil Limited	START DATE: 2008/11/18	DRILL: CME-55/HS Auger

SAMPLE TYPE SS - SPLIT SPOON ST - SHELBY TUBE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) / Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	SAMPLING TYPE	SAMPLING 'N' VALUE	SAMPLING RECOVERY %	I.D. / LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) / Water Level
0	ASPHALT											
	SAND - dark brown, coarse to fine grained, some silt, some clay to 1.1 m, moist		1	DC								
			2	DC			BH6-0.97m / BTEX, PHC F1-F4, Lead					
1	- trace gravel below 1.1 m		3	DC								
2	CLAY and SILT - gray, sandy, moist, stiff		4	DC								
			5	SS	14	100						
	SAND - dark gray, silty, moist, medium dense											
3	CLAY and SILT - dark gray, sandy, wet, soft		6	SS	3	100						
	CLAY and SILT - dark gray, wet, very soft											
	- sand lens at 3.6 m		7	SS	1	100						
4												
			8	SS	1	100						
5	SAND - dark gray, coarse to medium grained, trace silt, wet, medium dense									Potentiometric Elevation on 2008/12/11		
	- petroleum odour below 5.4 m		9	SS	11	25	BH6-5.94m / BTEX, PHC F1-F4, Lead					
6	END OF HOLE AT 6.1 m									Monitoring Well Installed to 6.1 m, 50 mm Dia. PVC Pipe, Screened from 4.6 m to 6.1 m		
7												
8												
9												
10												

O'CONNOR ASSOCIATES	LOGGED BY: SMD	COMPLETION DEPTH: 6.1 m
	REVIEWED BY: DWK	COMPLETION DATE: 2008/11/18
		Page 1 of 1

PROJECT: Environmental Site Assessment	TPC ELEV.: 88.865 m	BOREHOLE NO: **BH7**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	GRADE ELEV.: 88.936 m	JOB NO: 10-8518L00
CLIENT: Imperial Oil Limited	START DATE: 2008/11/18	DRILL: CME-55/HS Auger

SAMPLE TYPE SS - SPLIT SPOON ST - SHELBY TUBE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) / Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) / Water Level
0	ASPHALT											
	SAND - dark brown, medium grained, gravelly, some silt and clay, moist		1	DC								
1	CLAY and SILT - dark brown, sandy, moist		2	DC								
	- trace gravel below 1.5 m		3	DC								
2			4	DC			BH7-2.36m / BTEX, PHC F1-F4, Lead					
	- stiff below 2.3 m		5	SS	9	100						
	SAND - light olive brown, fine grained, moist											
3	- very loose below 3.0 m		6	SS	3	100						
	CLAY and SILT - gray, sandy, wet, very soft									Poteniometric Elevation on 2008/12/11		
4			7	SS	1	100						
	- soft below 4.5 m		8	SS	3	100				Monitoring Well Installed to 4.7 m, 50 mm Dia. PVC Pipe, Screened from 1.9 m to 4.7 m		
5	SAND - dark gray, medium to coarse grained, wet, very loose											
	- loose below 5.3 m		9	SS	10	100	BH7-5.94m / BTEX, PHC F1-F4, Lead					
6	END OF HOLE AT 5.9 m											
7												
8												
9												
10												

O'CONNOR ASSOCIATES

LOGGED BY: SMD	COMPLETION DEPTH: 5.9 m
REVIEWED BY: DWK	COMPLETION DATE: 2008/11/18
	Page 1 of 1

OAEI REPORT LOG 15 8518L00.GPJ SOIL LOG.GDT 09/10/13

APPENDIX B

GRAIN SIZE DISTRIBUTION ANALYTICAL RESULTS

Maxxam Analytics

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVE, NEPEAN
Project #: MA8E5682 10-8518L00
Your C.O.C. #: 22451

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS INC.
CAMPOBELLO - ESSO/EXXON
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2008/12/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A867695
Received: 2008/12/09, 10:00

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary reference
Particle Size Distribution by Hydrometer	3	EENVSOP-00078	McKeague 2.12

Remarks:

All Blank values are reported. Associated data are not blank corrected.
Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease.
Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses).

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025.

All CCME results met required criteria unless otherwise stated in the report. 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. Deviations from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method:
F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

All analysis data reported was generated when the analytical methods were in statistical control and criteria for spike recoveries, reference material recoveries, method blanks data and duplicate precision were met unless otherwise stated. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.
This report shall not be reproduced except in full, without the written approval of the laboratory.

Methods used by Maxxam are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 20th Edition, published by the American Public Health Association, or on US EPA, protocols found in the ' Test Methods for Evaluating Solid Waste ', Physical/Chemical Methods, SW846, 3rd Edition. Other procedures are based on the methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

Maxxam Analytics

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVE, NEPEAN
Project #: MA8E5682 10-8518L00
Your C.O.C. #: 22451

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS INC.
CAMPOBELLO - ESSO/EXXON
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2008/12/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A867695
Received: 2008/12/09, 10:00

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. 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. Your samples will be retained at Maxxam for a period of 45 days from receipt of data or as per contract.

Encryption Key

Letitia Prefontaine
12 Dec 2008 13:37:30 -07:00

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

LETITIA PREFONTAINE, B.Sc., Project Manager
Email: letitia.prefontaine@maxxamanalytics.com
Phone# (780) 577-7106

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Analytics

Maxxam Job #: A867695
Report Date: 2008/12/12

MAXXAM ANALYTICS INC.
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVE, NEPEAN
Project #: MA8E5682 10-8518L00

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		N08039	N08039	N08081		
Sampling Date		2008/11/17 13:15	2008/11/17 13:15	2008/11/17 13:30		
COC Number		22451	22451	22451		
	Units	BG5529-01R\BH1-3.65M	BG5529-01R\BH1-3.65M Lab-Dup	BG5530-01R\BH1-5.18M	RDL	QC Batch
Industrial						
See Attachment	N/A	ATTACH 2	ATTACH 3	ATTACH 4	N/A	2794900

RDL = Reportable Detection Limit

Maxxam ID		N08082		
Sampling Date		2008/11/17 17:30		
COC Number		22451		
	Units	BG5531-01R\BH4-2.74M	RDL	QC Batch
Industrial				
See Attachment	N/A	ATTACH 5	N/A	2794900

RDL = Reportable Detection Limit

Maxxam Analytics

Maxxam Job #: A867695
Report Date: 2008/12/12

MAXXAM ANALYTICS INC.
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVE, NEPEAN
Project #: MA8E5682 10-8518L00

Test Summary

Maxxam ID N08039 **Collected** 2008/11/17
Sample ID BG5529-01R\BH1-3.65M **Shipped** 2008/12/05
Matrix Soil **Received** 2008/12/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Particle Size Distribution by Hydrometer	HY	2794900	N/A	2008/12/10	JB9

Maxxam ID N08039 Dup **Collected** 2008/11/17
Sample ID BG5529-01R\BH1-3.65M **Shipped** 2008/12/05
Matrix Soil **Received** 2008/12/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Particle Size Distribution by Hydrometer	HY	2794900	N/A	2008/12/10	JB9

Maxxam ID N08081 **Collected** 2008/11/17
Sample ID BG5530-01R\BH1-5.18M **Shipped** 2008/12/05
Matrix Soil **Received** 2008/12/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Particle Size Distribution by Hydrometer	HY	2794900	N/A	2008/12/10	JB9

Maxxam ID N08082 **Collected** 2008/11/17
Sample ID BG5531-01R\BH4-2.74M **Shipped** 2008/12/05
Matrix Soil **Received** 2008/12/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Particle Size Distribution by Hydrometer	HY	2794900	N/A	2008/12/10	JB9

Maxxam Analytics

Maxxam Job #: A867695
Report Date: 2008/12/12

MAXXAM ANALYTICS INC.
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVE, NEPEAN
Project #: MA8E5682 10-8518L00

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Results relate only to the items tested.

Maxxam Analytics

MAXXAM ANALYTICS INC.
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVE, NEPEAN
Project #: MA8E5682 10-8518L00

Quality Assurance Report

Maxxam Job Number: A867695

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2794900 JB9	RPD [N08039-01]	See Attachment	2008/12/10	ATTACH 3		%	N/A
	SRM	See Attachment	2008/12/10		ATTACH 1	%	N/A

N/A = Not Applicable
RPD = Relative Percent Difference

Maxxam Analytics

Validation Signature Page

Maxxam Job #: A867695

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

LENE NIELSEN,

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. SCC and CALA have approved this reporting process and electronic report format.

C 20

A867695

MAXXAM ANALYTICS
6740 Campobello Road
Mississauga, Ontario, L5N 2L8
Phone (905) 817-5700
Fax (905) 817-5777

Maxxam Analytics

SUBCONTRACTING REQUEST FORM

Imperial Oil Ltd (Contract SN-11002162) - Environmental Remediation
Maxxam PM Akruti Atawala

To: Campo to Edm Env Subcontract

Job# A8E5682

Yes No International Sample/BioHazard (if yes, add copy of Movement Cert. heat treat is required prior to disposal)
✓ Yes No Special Protocol (if yes Protocol) 10L

Received @ Subcontract Lab by (sign) [signature] (print) Jessica Makauk

Received @ Subcontract Lab (Date) 12/09/08 (Time) 10:00

Received Lab's Job # ~~A8E5682~~ EA867695 Inspected by (print) Jessica Makauk SIF Yes No

Upon receipt record 3 temperatures for each package/cooler. If required by contract or legal sample, indicate if custody sealed

Temp1 3 Temp2 3 Temp3 3 Custody sealed Seal yes

Sample ID	Matrix	Test(s) Required	Container	Date Sampled	Date Required
BG5529-01R BH1-3.65M	S	Size Distribution	1(NOR)	2008/11/17	2008/12/12
BG5530-01R BH1-5.18M	S	Size Distribution	1(NOR)	2008/11/17	2008/12/12
BG5531-01R BH4-2.74	S	Size Distribution	1(ORG)	2008/11/17	2008/12/12

NOTES
1) Please call us if due date cannot be met. Please reference Sample ID on your report
2) Include copy of this completed form, Client COC & signed final report to scontractor@maxxamanalytics.com

SHIPPING INSTRUCTIONS
Ship Immediately (highlight Yellow)
Requires 9am
Requires Sat. Delivery
Regular Ship next available day
Sender (Print) Vicky DeAguiar Initial

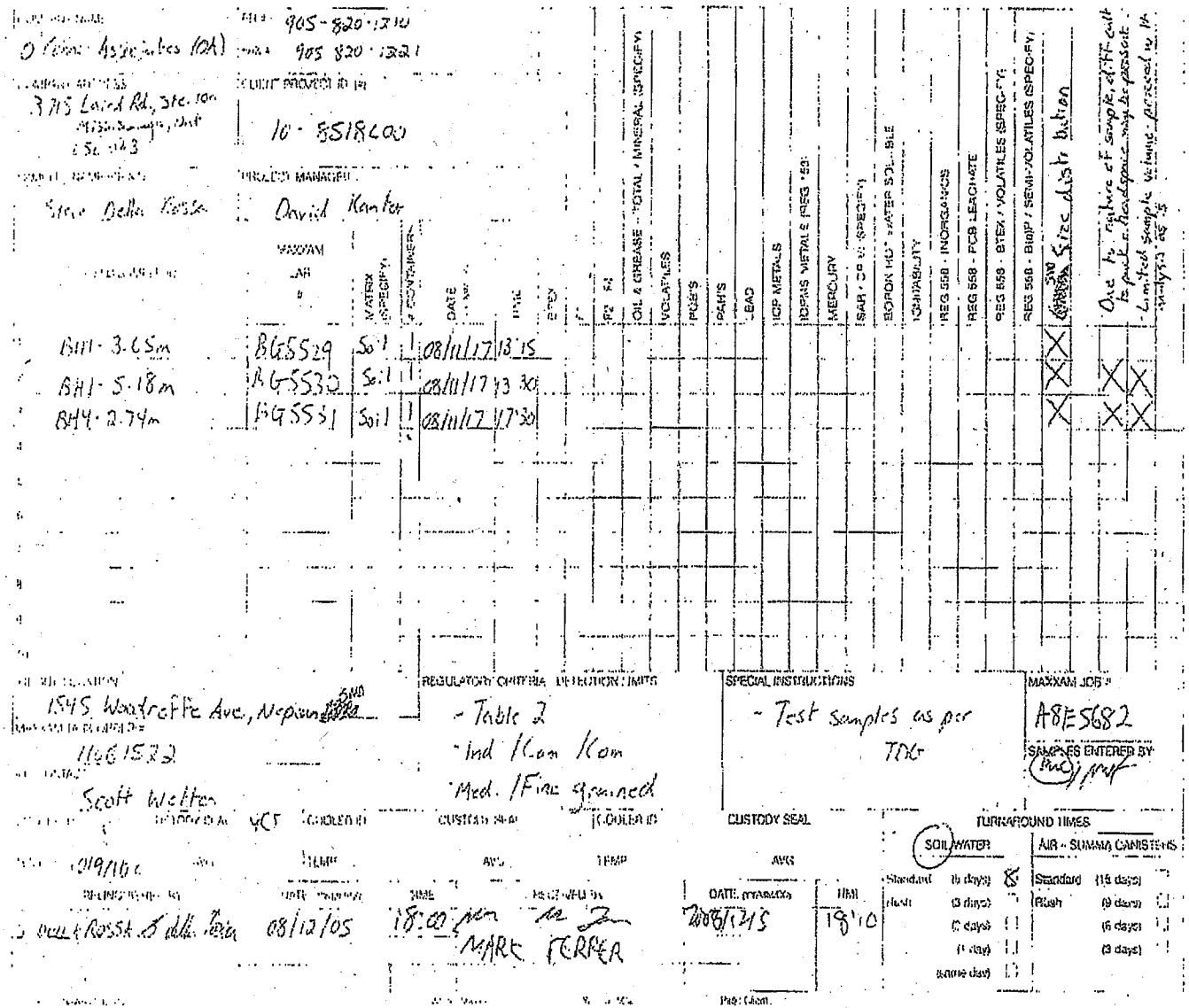
Ship Cold
Ship Room Temp
Ship Frozen
COC Must be Attached
(✓)

SHIPPING DEPARTMENT CHECKLIST
Correct Shipping location
Correct Sample Ids (Paperwork vs. Bottles)
Yes No Special-Cooler ice Tape-custody seal Date&Sign
Date Shipped
Shipper (Print) DEC 08 2008 Initial

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 902-0891

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

COC # 22451



DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 11/17/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 15-8518L00

Sample Submission Number: A867695

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery			X	*- all lab QC have met acceptance criteria*
Extraction Surrogate Recovery			X	
Method Blank Concentration			X	
Matrix Duplicate RPD	X			
Matrix Spike Recovery			X	
Lab Control Sample Recovery			X	

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	N/A
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

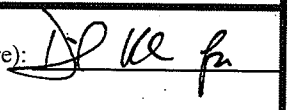
Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature): 

Date: 01/05/2009

APPENDIX C

MAXXAM ANALYTICS LABORATORY CERTIFICATES OF ANALYSIS

QUALITY ASSURANCE AND QUALITY CONTROL ANALYTICAL RESULTS

The field quality assurance and quality control (QA/QC) for this program consisted of one soil duplicate, one groundwater duplicate, a field blank and a trip blank. For the field duplicate samples, analyses of the QA/QC sample involved a comparison of the analytical results to the relative percent difference (RPD) between the field duplicate and original sample results. RPD is the absolute value of the difference between the sample and its duplicate, divided by the average concentration of the sample and its duplicate (represented as a percentage). The results of the QA/QC analyses were reviewed to determine if the RPD between the duplicates and the original samples fell within acceptable industry limits (i.e., maximum 80% for organic parameters). RPDs can be calculated only when the original and duplicate sample concentrations are at least 5 times the reportable detection limit.

The QA/QC results are summarized below:

- Soil field duplicate (BTEX, PHC fractions F1 to F4, and lead): One blind field duplicate soil samples was analyzed. When calculable, the RPDs were acceptable.
- Groundwater field duplicate (BTEX, PHC fractions F1 to F4, and lead): One blind field duplicate groundwater sample was analyzed. When calculable, the RPDs were acceptable.
- Field Blank (BTEX, PHC fractions F1 to F4, and lead): One sample was analyzed. The concentrations of BTEX, PHC fractions F1 to F4, and lead were not detected, and were therefore acceptable.
- Trip Blank (BTEX, PHC fraction F1): One sample was analyzed. The concentrations of BTEX and PHC fraction F1 were not detected, and were therefore acceptable.

The results of the laboratory QA/QC sample analyses, which included replicates and surrogate recoveries, were considered acceptable with respect to conventional QA/QC standards, with the exception of a low bias in leachable hexachloroethane and leachable pyridine concentrations as a result of a recovery below the lower control limit. This has no bearing on the analytical results as the concentrations of these parameters were below the laboratory detection limits, and the recovery of other instrument surrogates was within acceptable limits. The laboratory certificates of analysis, including the results of the analyses on the QA/QC samples, are presented herein.

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11115

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/11/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8448
Received: 2008/11/20, 17:53

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	5	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	5	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	5	CAM SOP-00316	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	5	CAM SOP-00408	EPA 6010
MOISTURE	5	CAM SOP-00445	McKeague 2nd ed 1978
pH CaCl2 EXTRACT	1	CAM SOP-00413	SM 4500 H

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11115

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/11/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8448
Received: 2008/11/20, 17:53
unless otherwise flagged.

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

Encryption Key

Akruti Atawala
28 Nov 2008 17:47:43 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8D8448
Report Date: 2008/11/28

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

RESULTS OF ANALYSES OF SOIL

Maxxam ID		BD0702	BD0703	BD0704	BD0705		
Sampling Date		2008/11/18 17:30	2008/11/18 15:30	2008/11/18 15:15	2008/11/18 10:30		
COC Number		11115	11115	11115	11115		
	Units	**BH7-2.36M**	**BH6-0.97M**	**BH6-5.94M**	**BH5-3.05M**	**RDL**	**QC Batch**
Moisture	%	35	14	16		0.2	1679808
Available (CaCl2) pH	pH				7.89		1683237

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BD0706	BD0707		
Sampling Date		2008/11/18 10:00	2008/11/18 10:15		
COC Number		11115	11115		
	Units	**BH5-3.67M**	**BH5-4.42M**	**RDL**	**QC Batch**
Moisture	%	30	31	0.2	1679808

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8448
Report Date: 2008/11/28

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BD0702	BD0703	BD0704		
Sampling Date		2008/11/18 17:30	2008/11/18 15:30	2008/11/18 15:15		
COC Number		11115	11115	11115		
	Units	**BH7-2.36M**	**BH6-0.97M**	**BH6-5.94M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	15	37	<5	5	1683653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BD0706	BD0707		
Sampling Date		2008/11/18 10:00	2008/11/18 10:15		
COC Number		11115	11115		
	Units	**BH5-3.67M**	**BH5-4.42M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	6	5	1683653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8448
Report Date: 2008/11/28

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BD0702	BD0703	BD0704		
Sampling Date		2008/11/18 17:30	2008/11/18 15:30	2008/11/18 15:15		
COC Number		11115	11115	11115		
	Units	**BH7-2.36M**	**BH6-0.97M**	**BH6-5.94M**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
Ethylbenzene	ug/g	<0.02	<0.02	0.15	0.02	1682336
o-Xylene	ug/g	<0.02	<0.02	0.10	0.02	1682336
p+m-Xylene	ug/g	<0.04	<0.04	0.54	0.04	1682336
Total Xylenes	ug/g	<0.04	<0.04	0.64	0.04	1682336
F1 (C6-C10)	ug/g	<10	<10	<10	10	1682336
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1682336
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	780			100	1685737
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1681572
F3 (C16-C34 Hydrocarbons)	ug/g	50	97	<10	10	1681572
F4 (C34-C50 Hydrocarbons)	ug/g	160	12	<10	10	1681572
Reached Baseline at C50	ug/g	No	Yes	Yes		1681572
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	107	106	105		1682336
o-Terphenyl	%	88	85	87		1681572
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	102	101	101		1682336
4-Bromofluorobenzene	%	97	96	97		1682336
D4-1,2-Dichloroethane	%	100	101	100		1682336

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8448
Report Date: 2008/11/28

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BD0706	BD0707		
Sampling Date		2008/11/18 10:00	2008/11/18 10:15		
COC Number		11115	11115		
	Units	**BH5-3.67M**	**BH5-4.42M**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	<0.02	0.02	1682336
Toluene	ug/g	0.05	0.06	0.02	1682336
Ethylbenzene	ug/g	8.8	5.3	0.02	1682336
o-Xylene	ug/g	1.7	0.73	0.02	1682336
p+m-Xylene	ug/g	31	18	0.04	1682336
Total Xylenes	ug/g	33	19	0.04	1682336
F1 (C6-C10)	ug/g	250	120	10	1682336
F1 (C6-C10) - BTEX	ug/g	210	92	10	1682336
F2 (C10-C16 Hydrocarbons)	ug/g	110	46	10	1681572
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	1681572
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	1681572
Reached Baseline at C50	ug/g	Yes	Yes		1681572
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	102	106		1682336
o-Terphenyl	%	88	88		1681572
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	100	101		1682336
4-Bromofluorobenzene	%	96	95		1682336
D4-1,2-Dichloroethane	%	77	100		1682336

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8448
Report Date: 2008/11/28

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BD0702 **Collected** 2008/11/18
Sample ID BH7-2.36M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
F4G (CCME Hydrocarbons Gravimetric)	BAL	1685737	2008/11/27	2008/11/28	C_P
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0703 **Collected** 2008/11/18
Sample ID BH6-0.97M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0704 **Collected** 2008/11/18
Sample ID BH6-5.94M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0705 **Collected** 2008/11/18
Sample ID BH5-3.05M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
pH CaCl2 EXTRACT		1683237	N/A	2008/11/26	DMA

Maxxam ID BD0706 **Collected** 2008/11/18
Sample ID BH5-3.67M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8448
Report Date: 2008/11/28

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BD0707 **Collected** 2008/11/18
Sample ID BH5-4.42M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8448
Report Date: 2008/11/28

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8D8448

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1681572	JKA	Method Blank	o-Terphenyl	2008/11/25		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/11/25	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2008/11/25	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2008/11/25	<10		ug/g	
1682336	AAI	Method Blank	1,4-Difluorobenzene	2008/11/26		101	%	60 - 140
			4-Bromofluorobenzene	2008/11/26		97	%	60 - 140
			D10-Ethylbenzene	2008/11/26		102	%	30 - 130
			D4-1,2-Dichloroethane	2008/11/26		100	%	60 - 140
			Benzene	2008/11/26	<0.02		ug/g	
			Toluene	2008/11/26	<0.02		ug/g	
			Ethylbenzene	2008/11/26	<0.02		ug/g	
			o-Xylene	2008/11/26	<0.02		ug/g	
			p+m-Xylene	2008/11/26	<0.04		ug/g	
			Total Xylenes	2008/11/26	<0.04		ug/g	
			F1 (C6-C10)	2008/11/26	<10		ug/g	
			F1 (C6-C10) - BTEX	2008/11/26	<10		ug/g	
1683653	APT	Method Blank	Acid Extractable Lead (Pb)	2008/11/26	<5		ug/g	
1685737	C_P	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2008/11/28	<100		ug/g	
1681572	JKA	LCS	o-Terphenyl	2008/11/26		87	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/11/26		90	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/11/26		90	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/11/26		90	%	60 - 130
1682336	AAI	LCS	1,4-Difluorobenzene	2008/11/26		95	%	60 - 140
			4-Bromofluorobenzene	2008/11/26		98	%	60 - 140
			D10-Ethylbenzene	2008/11/26		90	%	30 - 130
			D4-1,2-Dichloroethane	2008/11/26		101	%	60 - 140
			Benzene	2008/11/26		99	%	60 - 140
			Toluene	2008/11/26		100	%	60 - 140
			Ethylbenzene	2008/11/26		101	%	60 - 140
			o-Xylene	2008/11/26		101	%	60 - 140
			p+m-Xylene	2008/11/26		98	%	60 - 140
			F1 (C6-C10)	2008/11/26		73	%	60 - 140
1685737	C_P	LCS	F4G-sg (Grav. Heavy Hydrocarbons)	2008/11/28		93	%	65 - 135
1683653	APT	SRM	Acid Extractable Lead (Pb)	2008/11/26		95	%	75 - 125

QC Standard = Quality Control Standard

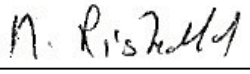
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

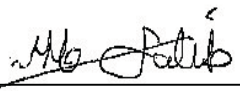
Maxxam Job #: A8D8448

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



MAMDOUH SALIB, Analyst, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 11115

COMPANY NAME:	PH #: 905-820-1210
O'Connor Associates	FAX #: 905-820-1221
COMPANY ADDRESS: 3715 Laird Rd, Ste. 100 Mississauga, Ont L5L 0A3	CLIENT PROJECT ID: (#) 10-8518 [redacted] L00 SMD
SAMPLER NAME (PRINT): Steve Della Rossa	PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	[redacted] SMD	Insufficient volume - proceed with analysis as per sample recovery	pH
1	BH7-2-36m	BD0702	Soil	3	08/11/18	17:30	X	X	X					X													
2	[redacted] SMD									SMD				SMD													
3	BH6-0-97m	BD0703	Soil	3	08/11/18	15:30	X	X	X					X													
4	[redacted] SMD									SMD															SMD		
5	BH6-5.94m	BD0704	Soil	3	08/11/18	15:15	X	X	X					X												X	
6	BH5-3.05m	BD0705	Soil	1	08/11/18	10:30																					X
7	BH5-3.67m	BD0706	Soil	3	08/11/18	10:00	X	X	X					X													
8	BH5-4.42m	BD0707	Soil	3	08/11/18	10:15	X	X	X					X													
9																											
10																											

IOL SITE LOCATION: 1545 Woodroffe Ave., Nepean, Ont K2G SMD

MAXXAM TASK ORDER #: 11061522

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- Table 2
- Ind./Com./Com.
- Med/Fine grained

SPECIAL INSTRUCTIONS: Test Samples as per TOR

MAXXAM JOB #: A8D8448

SAMPLES ENTERED BY: MK / AS

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 1/2/3 C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☒	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
STEVE DELLA ROSSA	08/11/20	17:50	MARIE FERRER	2008/11/20	17:53

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 11/18/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8D8448

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*- all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature):

Date: 01/05/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11117

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8451
Received: 2008/11/20, 17:53

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	3	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	3	CAM SOP-00408	EPA 6010
MOISTURE	3	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11117

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8451
Received: 2008/11/20, 17:53

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

Encryption Key

Akruti Atawala
16 Dec 2008 10:36:06 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8D8451
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

RESULTS OF ANALYSES OF SOIL

Maxxam ID		BD0713	BD0714	BD0715		
Sampling Date		2008/11/18 11:00	2008/11/18 11:30	2008/11/18 17:00		
COC Number		11117	11117	11117		
	Units	**BH3-3.05M**	**BH3-5.94M**	**BH7-5.94M**	**RDL**	**QC Batch**
Moisture	%	18	20	15	0.2	1679808

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8451
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BD0713	BD0714	BD0715		
Sampling Date		2008/11/18 11:00	2008/11/18 11:30	2008/11/18 17:00		
COC Number		11117	11117	11117		
	Units	**BH3-3.05M**	**BH3-5.94M**	**BH7-5.94M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	<5	5	1683299

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8451
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BD0713		BD0714		
Sampling Date		2008/11/18 11:00		2008/11/18 11:30		
COC Number		11117		11117		
	Units	**BH3-3.05M**	**RDL**	**BH3-5.94M**	**RDL**	**QC Batch**
Benzene	ug/g	2.6	0.2	0.05	0.02	1679814
Toluene	ug/g	48	0.2	0.22	0.02	1679814
Ethylbenzene	ug/g	39	0.2	0.10	0.02	1679814
o-Xylene	ug/g	58	0.2	0.17	0.02	1679814
p+m-Xylene	ug/g	140	0.4	0.35	0.04	1679814
Total Xylenes	ug/g	200	0.4	0.52	0.04	1679814
F1 (C6-C10)	ug/g	1300	100	<10	10	1679814
F1 (C6-C10) - BTEX	ug/g	1000	100	<10	10	1679814
F2 (C10-C16 Hydrocarbons)	ug/g	81	10	<10	10	1679917
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	<10	10	1679917
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1679917
Reached Baseline at C50	ug/g	Yes		Yes		1679917
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	120		98		1679814
o-Terphenyl	%	85		87		1679917
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	101		102		1679814
4-Bromofluorobenzene	%	94		95		1679814
D4-1,2-Dichloroethane	%	101		96		1679814

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8451
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BD0715		
Sampling Date		2008/11/18 17:00		
COC Number		11117		
	Units	**BH7-5.94M**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	0.02	1679814
Toluene	ug/g	<0.02	0.02	1679814
Ethylbenzene	ug/g	0.03	0.02	1679814
o-Xylene	ug/g	<0.02	0.02	1679814
p+m-Xylene	ug/g	<0.04	0.04	1679814
Total Xylenes	ug/g	<0.04	0.04	1679814
F1 (C6-C10)	ug/g	<10	10	1679814
F1 (C6-C10) - BTEX	ug/g	<10	10	1679814
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	1679917
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	1679917
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	1679917
Reached Baseline at C50	ug/g	Yes		1679917
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	105		1679814
o-Terphenyl	%	86		1679917
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	107		1679814
4-Bromofluorobenzene	%	102		1679814
D4-1,2-Dichloroethane	%	100		1679814

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8451
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BD0713 **Collected** 2008/11/18
Sample ID BH3-3.05M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1679814	2008/11/21	2008/11/22	DTI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1679917	2008/11/21	2008/11/23	JXI
Total Metals Analysis by ICP	ICP	1683299	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0714 **Collected** 2008/11/18
Sample ID BH3-5.94M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1679814	2008/11/21	2008/11/22	DTI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1679917	2008/11/21	2008/11/23	JXI
Total Metals Analysis by ICP	ICP	1683299	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0715 **Collected** 2008/11/18
Sample ID BH7-5.94M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1679814	2008/11/21	2008/11/22	DTI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1679917	2008/11/21	2008/11/23	JXI
Total Metals Analysis by ICP	ICP	1683299	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8451
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

The samples BH3-5.18M (Lab # BD0716-01) and BH3-4.42M (Lab # BD0717-01) had been lost by Purolator during trans-shipping to Edmonton for subcontracting analysis. Client submitted these samples again for grain size distribution analysis and the results have been reported under job A8E5682.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8D8451

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1679814	DTI	Method Blank	1,4-Difluorobenzene	2008/11/21		100	%	60 - 140
			4-Bromofluorobenzene	2008/11/21		94	%	60 - 140
			D10-Ethylbenzene	2008/11/21		97	%	30 - 130
			D4-1,2-Dichloroethane	2008/11/21		96	%	60 - 140
			Benzene	2008/11/21	<0.02		ug/g	
			Toluene	2008/11/21	<0.02		ug/g	
			Ethylbenzene	2008/11/21	<0.02		ug/g	
			o-Xylene	2008/11/21	<0.02		ug/g	
			p+m-Xylene	2008/11/21	<0.04		ug/g	
			Total Xylenes	2008/11/21	<0.04		ug/g	
			F1 (C6-C10)	2008/11/21	<10		ug/g	
			F1 (C6-C10) - BTEX	2008/11/21	<10		ug/g	
1679917	JXI	Method Blank	o-Terphenyl	2008/11/22		88	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/11/22	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2008/11/22	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2008/11/22	<10		ug/g	
1683299	APT	Method Blank	Acid Extractable Lead (Pb)	2008/11/26	<5		ug/g	
1679814	DTI	LCS	1,4-Difluorobenzene	2008/11/21		98	%	60 - 140
			4-Bromofluorobenzene	2008/11/21		95	%	60 - 140
			D10-Ethylbenzene	2008/11/21		101	%	30 - 130
			D4-1,2-Dichloroethane	2008/11/21		96	%	60 - 140
			Benzene	2008/11/21		86	%	60 - 140
			Toluene	2008/11/21		95	%	60 - 140
			Ethylbenzene	2008/11/21		97	%	60 - 140
			o-Xylene	2008/11/21		95	%	60 - 140
			p+m-Xylene	2008/11/21		91	%	60 - 140
			F1 (C6-C10)	2008/11/21		105	%	60 - 140
1679917	JXI	LCS	o-Terphenyl	2008/11/23		85	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/11/23		80	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/11/23		80	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/11/23		80	%	60 - 130
1683299	APT	SRM	Acid Extractable Lead (Pb)	2008/11/26		99	%	75 - 125

QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A8D8451

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

MAMDOUH SALIB, Analyst, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 11117

COMPANY NAME:	PH #: 905-820-1210
O'Connor Associates	FAX #: 905-820-1221
COMPANY ADDRESS: 3715 Laird Rd, Ste. 100 Mississauga, Ont L5L 0A3	CLIENT PROJECT ID: (#) 10-8518 5140 L00
SAMPLER NAME (PRINT): Steve Della Rossa	PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	Grain size distribution	Insufficient number of jars - Proceed with analysis as is - Poor sample recovery	Par single recovery - Proceed with analysis as is - Insufficient volume
1	BH3-3.05m	BD0713	Soil	3	08/11/18	11:00	X	X	X					X												X	
2	BH3-5.94m	BD0714	Soil	3	08/11/18	11:30	X	X	X					X													
3	BH7-5.94m	BD0715	Soil	2	08/11/18	17:00	X	X	X					X												X	
4	BH3-5.18m	BD0716	Soil	1	08/11/18	11:15																			X		
5	BH3-4.42m	BD0717	Soil	1	08/11/18	11:45																			X		
6																											
7																											
8																											
9																											
10																											

IOL SITE LOCATION: 1545 Woodroffe Ave, Nepean, Ont (5140)

MAXXAM TASK ORDER #: 1106522

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- Table 2
- Ind./Com./Com
- Med/Fine grained

SPECIAL INSTRUCTIONS:
- Test samples as per TOR
- 5x unused 250ml C/G jars for entire project
- 4x unused 120ml C/G jars for entire project

MAXXAM JOB #: A8D8451

SAMPLES ENTERED BY: mf/mc

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	463				
TEMP 1/2/3°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	X	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
STEVE DELLA ROSSA	08/11/20	17:50	MARK FERRER	2008/11/20	17:53

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 11/18/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8D8451

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			- *all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature):

Date: 01/05/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11116

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/11/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8452
Received: 2008/11/20, 17:53

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Semivolatile Organic Compounds (TCLP)	1	CAM SOP-00301	EPA 8270 modified
Cyanide (WAD) in Leachates	1	CAM SOP-00457	SM 4500 CN-I
Fluoride by ISE in Leachates	1	CAM SOP-00456	SM 4500FC
Mercury (TCLP Leachable) (mg/L)	1	CAM SOP-00453	EPA 7470
Total Metals in TCLP Leachate by ICPMS	1	CAM SOP-00447	EPA 6020
Ignitability of a Sample (1)	1	Ont SOP-0932	EPA 1030
Nitrate(NO3) + Nitrite(NO2) in Leachate	1	CAM SOP-00440	SM 4500 NO3 I
TCLP - % Solids	1	CAM SOP-00401	EPA 1311 (TCLP)
TCLP - EXTRACTION FLUID	1	CAM SOP-00401	EPA 1311
TCLP-INITIAL AND FINAL PH	1	CAM SOP-00401	EPA 1311
TCLP Zero Headspace Extraction	1	CAM SOP-00430	EPA 1311
VOCs in ZHE Leachates	1	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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11116

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/11/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8452
Received: 2008/11/20, 17:53
per contract.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

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

(1) Ignitability is not an SCC accredited test.

Encryption Key

Akruti Atawala
27 Nov 2008 19:54:27 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8D8452
Report Date: 2008/11/27

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

RESULTS OF ANALYSES OF SOIL

Maxxam ID		BD0718	BD0718		
Sampling Date		2008/11/18 16:00	2008/11/18 16:00		
COC Number		11116	11116		
	Units	**TCLP**	**TCLP Lab-Dup**	**RDL**	**QC Batch**
Amount Extracted (Wet Weight) (g)	N/A	25		N/A	1679732
Final pH	pH	6.00			1683513
Leachable Fluoride (F-)	mg/L	0.2		0.1	1683398
Leachable Free Cyanide	mg/L	<0.002		0.002	1683393
Initial pH	pH	10.2			1683513
TCLP - % Solids	%	100		0.2	1683502
TCLP Extraction Fluid	N/A	FLUID1			1683510
Leachable Nitrite (N)	mg/L	<0.01		0.01	1683401
Leachable Nitrate (N)	mg/L	<0.1		0.1	1683401
Leachable Nitrate + Nitrite	mg/L	<0.1		0.1	1683401
Leachable Mercury (Hg)	mg/L	<0.001	<0.001	0.001	1683516

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8452
Report Date: 2008/11/27

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BD0718		
Sampling Date		2008/11/18 16:00		
COC Number		11116		
	Units	**TCLP**	**RDL**	**QC Batch**
Leachable Arsenic (As)	mg/L	<0.2	0.2	1683437
Leachable Barium (Ba)	mg/L	0.7	0.2	1683437
Leachable Boron (B)	mg/L	<0.1	0.1	1683437
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	1683437
Leachable Chromium (Cr)	mg/L	<0.1	0.1	1683437
Leachable Lead (Pb)	mg/L	<0.1	0.1	1683437
Leachable Selenium (Se)	mg/L	<0.2	0.2	1683437
Leachable Silver (Ag)	mg/L	<0.01	0.01	1683437
Leachable Uranium (U)	mg/L	<0.01	0.01	1683437

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8452
Report Date: 2008/11/27

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BD0718	BD0718		
Sampling Date		2008/11/18 16:00	2008/11/18 16:00		
COC Number		11116	11116		
	Units	**TCLP**	**TCLP Lab-Dup**	**RDL**	**QC Batch**
Leachable Benzo(a)pyrene	mg/L	<0.0001	<0.0001	0.0001	1683643
Leachable m/p-Cresol	mg/L	<0.0025	<0.0025	0.0025	1683643
Leachable o-Cresol	mg/L	<0.0025	<0.0025	0.0025	1683643
Leachable Cresol Total	mg/L	<0.005	<0.005	0.005	1683643
Leachable 2,4-Dichlorophenol	mg/L	<0.0025	<0.0025	0.0025	1683643
Leachable Hexachlorobenzene	mg/L	<0.01	<0.01	0.01	1683643
Leachable Hexachloroethane	mg/L	<0.01	<0.01	0.01	1683643
Leachable Nitrobenzene	mg/L	<0.01	<0.01	0.01	1683643
Leachable Pentachlorophenol	mg/L	<0.0025	<0.0025	0.0025	1683643
Leachable Pyridine	mg/L	<0.01	<0.01	0.01	1683643
Leachable 2,3,4,6-Tetrachlorophenol	mg/L	<0.0025	<0.0025	0.0025	1683643
Leachable 2,4,5-Trichlorophenol	mg/L	<0.0005	<0.0005	0.0005	1683643
Leachable 2,4,6-Trichlorophenol	mg/L	<0.0025	<0.0025	0.0025	1683643
Extraction Surrogate Recovery (%)					
Leachable 2,4,6-Tribromophenol	%	81	73		1683643
Leachable 2-Fluorobiphenyl	%	71	56		1683643
Leachable 2-Fluorophenol	%	38	65		1683643
Leachable D14-Terphenyl (FS)	%	89	83		1683643
Leachable D5-Nitrobenzene	%	72	64		1683643
Leachable D5-Phenol	%	28	26		1683643

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8452
Report Date: 2008/11/27

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		BD0718		
Sampling Date		2008/11/18 16:00		
COC Number		11116		
	Units	**TCLP**	**RDL**	**QC Batch**
Leachable Benzene	mg/L	0.01	0.01	1680819
Leachable Carbon Tetrachloride	mg/L	<0.01	0.01	1680819
Leachable Chlorobenzene	mg/L	<0.01	0.01	1680819
Leachable Chloroform	mg/L	<0.01	0.01	1680819
Leachable 1,2-Dichlorobenzene	mg/L	<0.02	0.02	1680819
Leachable 1,4-Dichlorobenzene	mg/L	<0.02	0.02	1680819
Leachable 1,2-Dichloroethane	mg/L	<0.02	0.02	1680819
Leachable 1,1-Dichloroethylene	mg/L	<0.01	0.01	1680819
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.05	0.05	1680819
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<0.5	0.5	1680819
Leachable Tetrachloroethylene	mg/L	<0.01	0.01	1680819
Leachable Trichloroethylene	mg/L	<0.01	0.01	1680819
Leachable Vinyl Chloride	mg/L	<0.02	0.02	1680819
Instrument Surrogate Recovery (%)				
Leachable 4-Bromofluorobenzene	%	94		1680819
Leachable D4-1,2-Dichloroethane	%	106		1680819
Leachable D8-Toluene	%	97		1680819

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8452
Report Date: 2008/11/27

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

MISCELLANEOUS (SOIL)

Maxxam ID		BD0718		
Sampling Date		2008/11/18 16:00		
COC Number		11116		
	Units	**TCLP**	**RDL**	**QC Batch**
Ignitability	mm/min.	NI		1682067

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8452
Report Date: 2008/11/27

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BD0718 **Collected** 2008/11/18
Sample ID TCLP **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Semivolatile Organic Compounds (TCLP)	GC/MS	1683643	2008/11/26	2008/11/26	MWG
Cyanide (WAD) in Leachates	TECH/CN	1683393	N/A	2008/11/27	LHA
Fluoride by ISE in Leachates	ISE	1683398	2008/11/26	2008/11/26	LS
Mercury (TCLP Leachable) (mg/L)	CVAA	1683516	N/A	2008/11/26	SUK
Total Metals in TCLP Leachate by ICPMS	ICP1/MS	1683437	2008/11/26	2008/11/26	HRE
Ignitability of a Sample	BAL	1682067	2008/11/25	2008/11/26	MGE
Nitrate(NO3) + Nitrite(NO2) in Leachate	LACH	1683401	N/A	2008/11/26	CCI
TCLP - % Solids	BAL	1683502	2008/11/26	2008/11/26	LYA
TCLP - EXTRACTION FLUID		1683510	N/A	2008/11/26	LYA
TCLP-INITIAL AND FINAL PH	PH	1683513	N/A	2008/11/26	LYA
TCLP Zero Headspace Extraction		1679732	2008/11/21	2008/11/21	GAU
VOCs in ZHE Leachates	PTGC/MS	1680819	2008/11/24	2008/11/24	DKI

Maxxam ID BD0718 Dup **Collected** 2008/11/18
Sample ID TCLP **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Semivolatile Organic Compounds (TCLP)	GC/MS	1683643	2008/11/26	2008/11/26	MWG
Mercury (TCLP Leachable) (mg/L)	CVAA	1683516	N/A	2008/11/26	SUK

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8452
Report Date: 2008/11/27

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

SVOC Analysis: Control Chart Trend Violation- 4/5 above 1 sigma for 2,4,6-tribromophenol.

MISCELLANEOUS (SOIL)

Ignitability of a Sample: NI= Not ignitable

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8D8452

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1680819	DKI	Method Blank	Leachable 4-Bromofluorobenzene	2008/11/24		93	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2008/11/24		100	%	70 - 130
			Leachable D8-Toluene	2008/11/24		100	%	70 - 130
			Leachable Benzene	2008/11/24	<0.01		mg/L	
			Leachable Carbon Tetrachloride	2008/11/24	<0.01		mg/L	
			Leachable Chlorobenzene	2008/11/24	<0.01		mg/L	
			Leachable Chloroform	2008/11/24	<0.01		mg/L	
			Leachable 1,2-Dichlorobenzene	2008/11/24	<0.02		mg/L	
			Leachable 1,4-Dichlorobenzene	2008/11/24	<0.02		mg/L	
			Leachable 1,2-Dichloroethane	2008/11/24	<0.02		mg/L	
			Leachable 1,1-Dichloroethylene	2008/11/24	<0.01		mg/L	
			Leachable Methylene Chloride(Dichlorometha	2008/11/24	<0.05		mg/L	
			Leachable Methyl Ethyl Ketone (2-Butanone)	2008/11/24	<0.5		mg/L	
			Leachable Tetrachloroethylene	2008/11/24	<0.01		mg/L	
			Leachable Trichloroethylene	2008/11/24	<0.01		mg/L	
			Leachable Vinyl Chloride	2008/11/24	<0.02		mg/L	
1683393	LHA	Method Blank	Leachable Free Cyanide	2008/11/27	<0.002		mg/L	
1683398	LS	Method Blank	Leachable Fluoride (F-)	2008/11/26	<0.1		mg/L	
1683401	CCI	Method Blank	Leachable Nitrite (N)	2008/11/26	<0.01		mg/L	
			Leachable Nitrate (N)	2008/11/26	<0.1		mg/L	
			Leachable Nitrate + Nitrite	2008/11/26	<0.1		mg/L	
1683437	HRE	Method Blank	Leachable Arsenic (As)	2008/11/26	<0.2		mg/L	
			Leachable Barium (Ba)	2008/11/26	<0.2		mg/L	
			Leachable Boron (B)	2008/11/26	<0.1		mg/L	
			Leachable Cadmium (Cd)	2008/11/26	<0.05		mg/L	
			Leachable Chromium (Cr)	2008/11/26	<0.1		mg/L	
			Leachable Lead (Pb)	2008/11/26	<0.1		mg/L	
			Leachable Selenium (Se)	2008/11/26	<0.2		mg/L	
			Leachable Silver (Ag)	2008/11/26	<0.01		mg/L	
			Leachable Uranium (U)	2008/11/26	<0.01		mg/L	
1683516	SUK	Method Blank	Leachable Mercury (Hg)	2008/11/26	<0.001		mg/L	
1683643	MWG	Method Blank	Leachable 2,4,6-Tribromophenol	2008/11/26		94	%	10 - 130
			Leachable 2-Fluorobiphenyl	2008/11/26		77	%	30 - 130
			Leachable 2-Fluorophenol	2008/11/26		63	%	10 - 130
			Leachable D14-Terphenyl (FS)	2008/11/26		94	%	30 - 130
			Leachable D5-Nitrobenzene	2008/11/26		85	%	30 - 130
			Leachable D5-Phenol	2008/11/26		33	%	10 - 130
			Leachable Benzo(a)pyrene	2008/11/26	<0.0001		mg/L	
			Leachable m/p-Cresol	2008/11/26	<0.0025		mg/L	
			Leachable o-Cresol	2008/11/26	<0.0025		mg/L	
			Leachable Cresol Total	2008/11/26	<5		mg/L	
			Leachable 2,4-Dichlorophenol	2008/11/26	<0.0025		mg/L	
			Leachable Hexachlorobenzene	2008/11/26	<0.01		mg/L	
			Leachable Hexachloroethane	2008/11/26	<0.01		mg/L	
			Leachable Nitrobenzene	2008/11/26	<0.01		mg/L	
			Leachable Pentachlorophenol	2008/11/26	<0.0025		mg/L	
			Leachable Pyridine	2008/11/26	<0.01		mg/L	
			Leachable 2,3,4,6-Tetrachlorophenol	2008/11/26	<0.0025		mg/L	
			Leachable 2,4,5-Trichlorophenol	2008/11/26	<0.0005		mg/L	
			Leachable 2,4,6-Trichlorophenol	2008/11/26	<0.0025		mg/L	
1683516	SUK	RPD [BD0718-01]	Leachable Mercury (Hg)	2008/11/26	NC		%	25
1683643	MWG	RPD [BD0718-01]	Leachable Benzo(a)pyrene	2008/11/26	NC		%	40
			Leachable m/p-Cresol	2008/11/26	NC		%	40
			Leachable o-Cresol	2008/11/26	NC		%	40
			Leachable Cresol Total	2008/11/26	NC		%	40

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report (Continued)

Maxxam Job Number: A8D8452

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1683643	MWG	RPD [BD0718-01]	Leachable 2,4-Dichlorophenol	2008/11/26	NC		%	40
			Leachable Hexachlorobenzene	2008/11/26	NC		%	40
			Leachable Hexachloroethane	2008/11/26	NC		%	40
			Leachable Nitrobenzene	2008/11/26	NC		%	40
			Leachable Pentachlorophenol	2008/11/26	NC		%	40
			Leachable Pyridine	2008/11/26	NC		%	40
			Leachable 2,3,4,6-Tetrachlorophenol	2008/11/26	NC		%	40
			Leachable 2,4,5-Trichlorophenol	2008/11/26	NC		%	40
			Leachable 2,4,6-Trichlorophenol	2008/11/26	NC		%	40
1683516	SUK	MATRIX SPIKE [BD0718-01]	Leachable Mercury (Hg)	2008/11/26		99	%	75 - 125
1683643	MWG	MATRIX SPIKE [BD0718-01]	Leachable 2,4,6-Tribromophenol	2008/11/26		87	%	10 - 130
			Leachable 2-Fluorobiphenyl	2008/11/26		78	%	30 - 130
			Leachable 2-Fluorophenol	2008/11/26		32	%	10 - 130
			Leachable D14-Terphenyl (FS)	2008/11/26		95	%	30 - 130
			Leachable D5-Nitrobenzene	2008/11/26		78	%	30 - 130
			Leachable D5-Phenol	2008/11/26		36	%	10 - 130
			Leachable Benzo(a)pyrene	2008/11/26		101	%	30 - 130
			Leachable m/p-Cresol	2008/11/26		65	%	10 - 130
			Leachable o-Cresol	2008/11/26		76	%	10 - 130
			Leachable Cresol Total	2008/11/26		71	%	10 - 130
			Leachable 2,4-Dichlorophenol	2008/11/26		44	%	10 - 130
			Leachable Hexachlorobenzene	2008/11/26		90	%	30 - 130
			Leachable Hexachloroethane	2008/11/26		15 (1)	%	30 - 130
			Leachable Nitrobenzene	2008/11/26		76	%	30 - 130
			Leachable Pentachlorophenol	2008/11/26		95	%	30 - 130
			Leachable Pyridine	2008/11/26		21 (1)	%	30 - 130
			Leachable 2,3,4,6-Tetrachlorophenol	2008/11/26		98	%	10 - 130
			Leachable 2,4,5-Trichlorophenol	2008/11/26		71	%	10 - 130
			Leachable 2,4,6-Trichlorophenol	2008/11/26		74	%	10 - 130
1680819	DKI	LCS	Leachable 4-Bromofluorobenzene	2008/11/24		99	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2008/11/24		98	%	70 - 130
			Leachable D8-Toluene	2008/11/24		101	%	70 - 130
			Leachable Benzene	2008/11/24		106	%	70 - 130
			Leachable Carbon Tetrachloride	2008/11/24		105	%	70 - 130
			Leachable Chlorobenzene	2008/11/24		98	%	70 - 130
			Leachable Chloroform	2008/11/24		105	%	70 - 130
			Leachable 1,2-Dichlorobenzene	2008/11/24		102	%	70 - 130
			Leachable 1,4-Dichlorobenzene	2008/11/24		111	%	70 - 130
			Leachable 1,2-Dichloroethane	2008/11/24		101	%	70 - 130
			Leachable 1,1-Dichloroethylene	2008/11/24		124	%	70 - 130
			Leachable Methylene Chloride(Dichlorometha	2008/11/24		103	%	70 - 130
			Leachable Methyl Ethyl Ketone (2-Butanone)	2008/11/24		114	%	60 - 140
			Leachable Tetrachloroethylene	2008/11/24		102	%	70 - 130
			Leachable Trichloroethylene	2008/11/24		108	%	70 - 130
			Leachable Vinyl Chloride	2008/11/24		102	%	70 - 130
1683393	LHA	LCS	Leachable Free Cyanide	2008/11/27		109	%	75 - 125
1683398	LS	LCS	Leachable Fluoride (F-)	2008/11/26		96	%	80 - 120
1683401	CCI	LCS	Leachable Nitrite (N)	2008/11/26		102	%	80 - 120
			Leachable Nitrate (N)	2008/11/26		93	%	80 - 120
1683437	HRE	LCS	Leachable Arsenic (As)	2008/11/26		106	%	86 - 119
			Leachable Barium (Ba)	2008/11/26		101	%	83 - 115
			Leachable Boron (B)	2008/11/26		92	%	78 - 133
			Leachable Cadmium (Cd)	2008/11/26		104	%	85 - 116

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report (Continued)

Maxxam Job Number: A8D8452

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1683437	HRE	LCS	Leachable Chromium (Cr)	2008/11/26		103	%	76 - 120
			Leachable Lead (Pb)	2008/11/26		99	%	80 - 123
			Leachable Selenium (Se)	2008/11/26		106	%	82 - 118
			Leachable Silver (Ag)	2008/11/26		101	%	75 - 125
			Leachable Uranium (U)	2008/11/26		97	%	82 - 124
1683516	SUK	LCS	Leachable Mercury (Hg)	2008/11/26		106	%	84 - 113
1683643	MWG	LCS	Leachable 2,4,6-Tribromophenol	2008/11/26		97	%	10 - 130
			Leachable 2-Fluorobiphenyl	2008/11/26		83	%	30 - 130
			Leachable 2-Fluorophenol	2008/11/26		47	%	10 - 130
			Leachable D14-Terphenyl (FS)	2008/11/26		102	%	30 - 130
			Leachable D5-Nitrobenzene	2008/11/26		88	%	30 - 130
			Leachable D5-Phenol	2008/11/26		34	%	10 - 130
			Leachable Benzo(a)pyrene	2008/11/26		107	%	30 - 130
			Leachable m/p-Cresol	2008/11/26		69	%	10 - 130
			Leachable o-Cresol	2008/11/26		75	%	10 - 130
			Leachable Cresol Total	2008/11/26		72	%	10 - 130
			Leachable 2,4-Dichlorophenol	2008/11/26		73	%	10 - 130
			Leachable Hexachlorobenzene	2008/11/26		96	%	30 - 130
			Leachable Hexachloroethane	2008/11/26		42	%	30 - 130
			Leachable Nitrobenzene	2008/11/26		95	%	30 - 130
			Leachable Pentachlorophenol	2008/11/26		104	%	30 - 130
			Leachable Pyridine	2008/11/26		23 (1)	%	30 - 130
			Leachable 2,3,4,6-Tetrachlorophenol	2008/11/26		109	%	10 - 130
			Leachable 2,4,5-Trichlorophenol	2008/11/26		81	%	10 - 130
			Leachable 2,4,6-Trichlorophenol	2008/11/26		87	%	10 - 130
1683393	LHA	LEACH. BLANK	Leachable Free Cyanide	2008/11/27	<0.002		mg/L	
1683398	LS	LEACH. BLANK	Leachable Fluoride (F-)	2008/11/26	<0.1		mg/L	
1683401	CCI	LEACH. BLANK	Leachable Nitrite (N)	2008/11/26	<0.01		mg/L	
			Leachable Nitrate (N)	2008/11/26	<0.1		mg/L	
			Leachable Nitrate + Nitrite	2008/11/26	<0.1		mg/L	
1683437	HRE	LEACH. BLANK	Leachable Arsenic (As)	2008/11/26	<0.2		mg/L	
			Leachable Barium (Ba)	2008/11/26	<0.2		mg/L	
			Leachable Boron (B)	2008/11/26	<0.1		mg/L	
			Leachable Cadmium (Cd)	2008/11/26	<0.05		mg/L	
			Leachable Chromium (Cr)	2008/11/26	<0.1		mg/L	
			Leachable Lead (Pb)	2008/11/26	<0.1		mg/L	
			Leachable Selenium (Se)	2008/11/26	<0.2		mg/L	
			Leachable Silver (Ag)	2008/11/26	<0.01		mg/L	
			Leachable Uranium (U)	2008/11/26	<0.01		mg/L	
1683516	SUK	LEACH. BLANK	Leachable Mercury (Hg)	2008/11/26	<0.001		mg/L	

NC = Non-calculable
RPD = Relative Percent Difference
(1) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2008/11/27 7:53 PM

Invoice Client Name: Imperial Oil Ltd (Contract SN-11002162)
Invoice Client ID #: 2209
Invoice Project Manager: Scott Wetton

Report To Client Name: O'Connor Associates Environmental Inc
Report To Client ID #: 4907
Report To Project Manager: David Kantor

Maxxam Project Manager: AKRUTI ATAWALA

Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Client Project #: 10-8518L00
Task #: 11061522
Quote: A85084
COC/Submission #: 11116

TAT: 8 Days
Rush: No

Maxxam Job #: A8D8452

Received By: DAVID KING-NAM CHAN
Received: 2008/11/20 17:53

DQW #: 523
DQW Created By: AKRUTIATAWALA
DQW Created: 2008/11/27 19:44

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
BD0718	TCLP	Soil	ABNMS-LC	A/BN	Hexachloroethane	#1 Matrix Spike Recovery Below Control Limit	#1 Matrix Interference	This may represent a low bias for this parameter(s) in this sample.
BD0718	TCLP	Soil	ABNMS-LC	A/BN	Pyridine	#1 Matrix Spike Recovery Below Control Limit	#1 Matrix Interference	This may represent a low bias for this parameter(s) in this sample.

Waiver Issued By: A. Atawala. **Name:** AKRUTIATAWALA

Signature: _____ **Date:** 2008/11/27 19:48 **Title:** Project Manager

Data Quality Waiver Reviewed and Accepted By: **Name:** _____

Signature: _____ **Date:** _____ **Title:** _____

Data Quality Waiver Reviewed and Declined By: **Name:** _____

Signature: _____ **Date:** _____ **Title:** _____

Comments / Requested Actions: _____

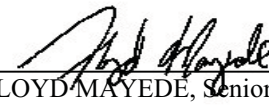
If this waiver is not returned, or the undersigned Maxxam Analytics representative not contacted within 14 days of issuance, the issue will be regarded as closed and the associated data will be deemed acceptable as reported.

Validation Signature Page

Maxxam Job #: A8D8452

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

BRAD NEWMAN, Scientific Specialist



FLOYD MAYEDE, Senior Analyst

==========

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. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 11116

COMPANY NAME:	PH #: 905-820-1210
O'Connor Associates	FAX #: 905-820-1210
COMPANY ADDRESS: 3715 Laird Rd, Ste. 100 Mississauga, Ont L5L 0A3	CLIENT PROJECT ID: (#) 10-8518 LOO
SAMPLER NAME (PRINT): Steve Della Rossa	PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX (VOLATILES SPECIFY)	REG 558 - B(a)P (SEMI-VOLATILES SPECIFY)					
1	TCLP	BD0718	Soil	3	08/11/18	16:00														X	X		X	X					
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													

IOL SITE LOCATION:	REGULATORY CRITERIA / DETECTION LIMITS:	SPECIAL INSTRUCTIONS:	MAXXAM JOB #:
1545 Woodroffe Ave., Nepean, On.	Reg. 558	- Test samples as per TDG - Report criteria on C of A.	A8D8452
MAXXAM TASK ORDER #: 1106152 2			SAMPLES ENTERED BY:
IOL CONTACT: Scott Wetton			

COOLER ID 1	CUSTODY SEAL Yes	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 17.3°C	AVG	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
STEVE DELLA ROSSA	08/11/20	17:50	MARIA FERRER	08/11/20	17:53

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☒	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 11/18/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8D8452

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			Leachable Hexachloroethane and Leachable Pyridine
Matrix Duplicate RPD	X			may be biased low; recovery below lower control limit
Matrix Spike Recovery		X		Leachable Pyridine may be biased low
Lab Control Sample Recovery		X		; recovery below lower control limit

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: Yes

Date Issued: 11/27/2008

Date of Response: 12/02/2008

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

The concentrations of the parameters that are indicated as being biased low were below detection. Therefore, the results of the samples would be considered acceptable.

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature):

Date: 01/05/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11114

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8454
Received: 2008/11/20, 17:53

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	7	Ont SOP 0102	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	7	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	7	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	7	CAM SOP-00408	EPA 6010
MOISTURE	7	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11114

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8D8454
Received: 2008/11/20, 17:53

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

Encryption Key

Akruti Atawala
16 Dec 2008 10:40:18 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

RESULTS OF ANALYSES OF SOIL

Maxxam ID		BD0727		BD0728	BD0730		
Sampling Date		2008/11/17 17:00		2008/11/17 17:15	2008/11/17 15:00		
COC Number		11114		11114	11114		
	Units	**BH4-2.29M**	**QC Batch**	**BH4-6.10M**	**BH2-3.66M**	**RDL**	**QC Batch**
Moisture	%	21	1680250	16	31	0.2	1679808

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BD0731	BD0732	BD0733	BD0734		
Sampling Date		2008/11/17 15:00	2008/11/17 15:30	2008/11/17 13:00	2008/11/17 12:45		
COC Number		11114	11114	11114	11114		
	Units	**QA1**	**BH2-4.42M**	**BH1-3.05M**	**BH1-5.94M**	**RDL**	**QC Batch**
Moisture	%	34	25	21	15	0.2	1679808

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BD0734		
Sampling Date		2008/11/17 12:45		
COC Number		11114		
	Units	**BH1-5.94M Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	15	0.2	1679808

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BD0727	BD0728	BD0730		
Sampling Date		2008/11/17 17:00	2008/11/17 17:15	2008/11/17 15:00		
COC Number		11114	11114	11114		
	Units	**BH4-2.29M**	**BH4-6.10M**	**BH2-3.66M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	5	<5	5	1683653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BD0731	BD0732	BD0733		
Sampling Date		2008/11/17 15:00	2008/11/17 15:30	2008/11/17 13:00		
COC Number		11114	11114	11114		
	Units	**QA1**	**BH2-4.42M**	**BH1-3.05M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	5	7	<5	5	1683653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BD0734		
Sampling Date		2008/11/17 12:45		
COC Number		11114		
	Units	**BH1-5.94M**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	5	1683653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BD0727	BD0727	BD0728		
Sampling Date		2008/11/17 17:00	2008/11/17 17:00	2008/11/17 17:15		
COC Number		11114	11114	11114		
	Units	**BH4-2.29M**	**BH4-2.29M Lab-Dup**	**BH4-6.10M**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.04	1682336
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.04	1682336
F1 (C6-C10)	ug/g	<10	<10	<10	10	1682336
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1682336
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	1681572
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1681572
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1681572
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1681572
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	109	105	104		1682336
o-Terphenyl	%	89	86	91		1681572
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	101	102	101		1682336
4-Bromofluorobenzene	%	97	98	97		1682336
D4-1,2-Dichloroethane	%	74	90	102		1682336

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BD0730	BD0731	BD0732		
Sampling Date		2008/11/17 15:00	2008/11/17 15:00	2008/11/17 15:30		
COC Number		11114	11114	11114		
	Units	**BH2-3.66M**	**QA1**	**BH2-4.42M**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
Toluene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.02	1682336
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.04	1682336
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.04	1682336
F1 (C6-C10)	ug/g	<10	<10	<10	10	1682336
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	1682336
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	16	10	1681572
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	10	1681572
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	10	1681572
Reached Baseline at C50	ug/g	Yes	Yes	Yes		1681572
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	103	103	103		1682336
o-Terphenyl	%	90	89	87		1681572
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	102	101	100		1682336
4-Bromofluorobenzene	%	96	96	97		1682336
D4-1,2-Dichloroethane	%	94	100	95		1682336

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BD0733		BD0734		
Sampling Date		2008/11/17 13:00		2008/11/17 12:45		
COC Number		11114		11114		
	Units	**BH1-3.05M**	**RDL**	**BH1-5.94M**	**RDL**	**QC Batch**
Benzene	ug/g	6.4	0.2	<0.02	0.02	1682336
Toluene	ug/g	96	0.2	0.03	0.02	1682336
Ethylbenzene	ug/g	54	0.2	0.02	0.02	1682336
o-Xylene	ug/g	80	0.2	0.03	0.02	1682336
p+m-Xylene	ug/g	210	0.4	0.08	0.04	1682336
Total Xylenes	ug/g	290	0.4	0.10	0.04	1682336
F1 (C6-C10)	ug/g	1200	100	<10	10	1682336
F1 (C6-C10) - BTEX	ug/g	790	100	<10	10	1682336
F2 (C10-C16 Hydrocarbons)	ug/g	230	10	<10	10	1681572
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	<10	10	1681572
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<10	10	1681572
Reached Baseline at C50	ug/g	Yes		Yes		1681572
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	104		104		1682336
o-Terphenyl	%	85		88		1681572
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	101		101		1682336
4-Bromofluorobenzene	%	97		97		1682336
D4-1,2-Dichloroethane	%	93		88		1682336

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BD0727 **Collected** 2008/11/17
Sample ID BH4-2.29M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1680250	N/A	2008/11/21	FOT

Maxxam ID BD0727 Dup **Collected** 2008/11/17
Sample ID BH4-2.29M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/25	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA

Maxxam ID BD0728 **Collected** 2008/11/17
Sample ID BH4-6.10M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0730 **Collected** 2008/11/17
Sample ID BH2-3.66M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0731 **Collected** 2008/11/17
Sample ID QA1 **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/25	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BD0732 **Collected** 2008/11/17
Sample ID BH2-4.42M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/26	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0733 **Collected** 2008/11/17
Sample ID BH1-3.05M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/26	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0734 **Collected** 2008/11/17
Sample ID BH1-5.94M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	1682336	2008/11/21	2008/11/26	AAI
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	1681572	2008/11/24	2008/11/26	JKA
Total Metals Analysis by ICP	ICP	1683653	2008/11/26	2008/11/26	APT
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam ID BD0734 Dup **Collected** 2008/11/17
Sample ID BH1-5.94M **Shipped** 2008/11/20
Matrix Soil **Received** 2008/11/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	1679808	N/A	2008/11/21	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8D8454
Report Date: 2008/12/16

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

The sample BH2-2.59M (Lab # BD0729-01) had been lost by Purolator during trans-shipping to Edmonton for subcontracting analysis. Client submitted sample again for grain size distribution analysis and these results have been reported under job A8E5682.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8D8454

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1681572	JKA	Method Blank	o-Terphenyl	2008/11/25		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/11/25	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2008/11/25	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2008/11/25	<10		ug/g	
1682336	AAI	Method Blank	1,4-Difluorobenzene	2008/11/26		101	%	60 - 140
			4-Bromofluorobenzene	2008/11/26		97	%	60 - 140
			D10-Ethylbenzene	2008/11/26		102	%	30 - 130
			D4-1,2-Dichloroethane	2008/11/26		100	%	60 - 140
			Benzene	2008/11/26	<0.02		ug/g	
			Toluene	2008/11/26	<0.02		ug/g	
			Ethylbenzene	2008/11/26	<0.02		ug/g	
			o-Xylene	2008/11/26	<0.02		ug/g	
			p+m-Xylene	2008/11/26	<0.04		ug/g	
			Total Xylenes	2008/11/26	<0.04		ug/g	
			F1 (C6-C10)	2008/11/26	<10		ug/g	
			F1 (C6-C10) - BTEX	2008/11/26	<10		ug/g	
1683653	APT	Method Blank	Acid Extractable Lead (Pb)	2008/11/26	<5		ug/g	
1681572	JKA	RPD [BD0727-02]	F2 (C10-C16 Hydrocarbons)	2008/11/25	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2008/11/25	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2008/11/25	NC		%	50
1682336	AAI	RPD [BD0727-02]	Benzene	2008/11/26	NC		%	50
			Toluene	2008/11/26	NC		%	50
			Ethylbenzene	2008/11/26	NC		%	50
			o-Xylene	2008/11/26	NC		%	50
			p+m-Xylene	2008/11/26	NC		%	50
			Total Xylenes	2008/11/26	NC		%	50
			F1 (C6-C10)	2008/11/26	NC		%	50
			F1 (C6-C10) - BTEX	2008/11/26	NC		%	50
1679808	ICA	RPD [BD0734-02]	Moisture	2008/11/21	3.3		%	50
1681572	JKA	MATRIX SPIKE [BD0727-02]	o-Terphenyl	2008/11/26		96	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/11/26		99	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/11/26		99	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/11/26		99	%	60 - 130
1682336	AAI	MATRIX SPIKE [BD0727-02]	1,4-Difluorobenzene	2008/11/26		101	%	60 - 140
			4-Bromofluorobenzene	2008/11/26		96	%	60 - 140
			D10-Ethylbenzene	2008/11/26		106	%	30 - 130
			D4-1,2-Dichloroethane	2008/11/26		73	%	60 - 140
			Benzene	2008/11/26		79	%	60 - 140
			Toluene	2008/11/26		91	%	60 - 140
			Ethylbenzene	2008/11/26		92	%	60 - 140
			o-Xylene	2008/11/26		90	%	60 - 140
			p+m-Xylene	2008/11/26		89	%	60 - 140
			F1 (C6-C10)	2008/11/26		80	%	60 - 140
1681572	JKA	LCS	o-Terphenyl	2008/11/26		87	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/11/26		90	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/11/26		90	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/11/26		90	%	60 - 130
1682336	AAI	LCS	1,4-Difluorobenzene	2008/11/26		95	%	60 - 140
			4-Bromofluorobenzene	2008/11/26		98	%	60 - 140
			D10-Ethylbenzene	2008/11/26		90	%	30 - 130
			D4-1,2-Dichloroethane	2008/11/26		101	%	60 - 140
			Benzene	2008/11/26		99	%	60 - 140
			Toluene	2008/11/26		100	%	60 - 140

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report (Continued)

Maxxam Job Number: A8D8454

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1682336	AAI	LCS	Ethylbenzene	2008/11/26		101	%	60 - 140
			o-Xylene	2008/11/26		101	%	60 - 140
			p+m-Xylene	2008/11/26		98	%	60 - 140
			F1 (C6-C10)	2008/11/26		73	%	60 - 140
1683653	APT	SRM	Acid Extractable Lead (Pb)	2008/11/26		95	%	75 - 125

NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A8D8454

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

MAMDOUH SALIB, Analyst, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 11114

COMPANY NAME:	PH #: 905-820-1210
O'Conner Associates	FAX #: 905-820-1221
COMPANY ADDRESS: 3715 Laird Rd., Ste 100 Mississauga, Ont. L5L 0A3	CLIENT PROJECT ID: (#) 10-8518 [redacted] L00 SMD
SAMPLER NAME (PRINT): Steve Della Rossa	PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	Grain size distribution	Insufficient volume - proceed with analysis as is: Poor sample recovery			
1	BH4-2.29m	BD0727	Soil	3	08/11/17	17:00	X	X	X					X																
2	[redacted] SMD	B FW 08/11/20					SMD																				SMD			
3	BH4-6.10m	BD0728	Soil	3	08/11/17	17:15	X	X	X					X																
4	BH2-2.59m	BD0729	Soil	1	08/11/17	16:00																					X	X		
5	BH2-3.66m	BD0730	Soil	3	08/11/17	15:00	X	X	X					X																
6	QA1	BD0731	Soil	3	08/11/17	15:00	X	X	X					X																
7	BH2-4.42m	BD0732	Soil	3	08/11/17	15:30	X	X	X					X														X		
8	BH1-3.05m	BD0733	Soil	3	08/11/17	13:00	X	X	X					X																
9	BH1-5.94m	BD0734	Soil	3	08/11/17	12:45	X	X	X					X																
10																														

IOL SITE LOCATION:	REGULATORY CRITERIA / DETECTION LIMITS:	SPECIAL INSTRUCTIONS:	MAXXAM JOB #:
1545 Woodroffe Ave., Nepean, Ont SMD	- Table 2 - Ind./Com./Com - Med./Fine grained	Test samples as per TOR	A8D8454
MAXXAM TASK ORDER #: 1106522			SAMPLES ENTERED BY: FW/ AS
IOL CONTACT: Scott Wetton			

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 1/2/3C AVG		TEMP AVG		TEMP AVG	

TURNAROUND TIMES

SOIL/WATER			AIR - SUMMA CANISTERS	
Standard	(5 days)	☒	Standard	(15 days) ☐
Rush	(3 days)	☐	Rush	(9 days) ☐
	(2 days)	☐		(6 days) ☐
	(1 day)	☐		(3 days) ☐
	(same day)	☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
STEVE DELLA ROSSA	08/11/20	17:50	MARK AERRER	2008/11/20	17:53

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 11/17/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8D8454

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			- *all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD	X			
Matrix Spike Recovery	X			
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD	X			- *all field QC have met acceptance criteria*

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature):

Date: 01/05/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11782

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8991
Received: 2008/12/13, 08:25

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11782

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8991
Received: 2008/12/13, 08:25

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

Encryption Key

Akruti Atawala
22 Dec 2008 15:31:35 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8E8991
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		BI2168		BI2169		
Sampling Date		2008/12/11 13:15		2008/12/11 14:30		
COC Number		11782		11782		
	Units	**BH7**	**QC Batch**	**QA1**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	1.0	1705719	<0.5	0.5	1704838

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8991
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2168	BI2168		
Sampling Date		2008/12/11 13:15	2008/12/11 13:15		
COC Number		11782	11782		
	Units	**BH7**	**BH7 Lab-Dup**	**RDL**	**QC Batch**
Benzene	ug/L	<0.2	<0.2	0.2	1704990
Toluene	ug/L	1.3	1.3	0.2	1704990
Ethylbenzene	ug/L	0.8	0.9	0.2	1704990
o-Xylene	ug/L	1.8	1.9	0.2	1704990
p+m-Xylene	ug/L	3.4	3.7	0.4	1704990
Total Xylenes	ug/L	5.2	5.6	0.4	1704990
F1 (C6-C10)	ug/L	<100	<100	100	1704990
F1 (C6-C10) - BTEX	ug/L	<100	<100	100	1704990
F2 (C10-C16 Hydrocarbons)	ug/L	<100		100	1704576
F3 (C16-C34 Hydrocarbons)	ug/L	<100		100	1704576
F4 (C34-C50 Hydrocarbons)	ug/L	<100		100	1704576
Reached Baseline at C50	ug/L	Yes			1704576
F1 + F2	ug/L	<100		100	1704576
F3 + F4	ug/L	<100		100	1704576
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	95			1704576
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	100	102		1704990
4-Bromofluorobenzene	%	97	98		1704990
D10-Ethylbenzene	%	105	106		1704990
D4-1,2-Dichloroethane	%	110	111		1704990

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8991
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2169	BI2169		
Sampling Date		2008/12/11 14:30	2008/12/11 14:30		
COC Number		11782	11782		
	Units	**QA1**	**QA1 Lab-Dup**	**RDL**	**QC Batch**
Benzene	ug/L	390		2	1704990
Toluene	ug/L	57		2	1704990
Ethylbenzene	ug/L	230		2	1704990
o-Xylene	ug/L	120		2	1704990
p+m-Xylene	ug/L	420		4	1704990
Total Xylenes	ug/L	540		4	1704990
F1 (C6-C10)	ug/L	1500		1000	1704990
F1 (C6-C10) - BTEX	ug/L	<1000		1000	1704990
F2 (C10-C16 Hydrocarbons)	ug/L	140	130	100	1704576
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	1704576
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	1704576
Reached Baseline at C50	ug/L	Yes	Yes		1704576
F1 + F2	ug/L	<1000		1000	1704576
F3 + F4	ug/L	<100	<100	100	1704576
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	95	94		1704576
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	106			1704990
4-Bromofluorobenzene	%	96			1704990
D10-Ethylbenzene	%	107			1704990
D4-1,2-Dichloroethane	%	113			1704990

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8991
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BI2168 **Collected** 2008/12/11
Sample ID BH7 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704990	2008/12/18	2008/12/18	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704576	2008/12/18	2008/12/19	JJE
Dissolved Metals by ICPMS	ICP/MS	1705719	N/A	2008/12/19	JBW

Maxxam ID BI2168 Dup **Collected** 2008/12/11
Sample ID BH7 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704990	2008/12/18	2008/12/18	GRU

Maxxam ID BI2169 **Collected** 2008/12/11
Sample ID QA1 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704990	2008/12/18	2008/12/19	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704576	2008/12/18	2008/12/19	JJE
Dissolved Metals by ICPMS	ICP/MS	1704838	N/A	2008/12/22	JBW

Maxxam ID BI2169 Dup **Collected** 2008/12/11
Sample ID QA1 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704576	2008/12/18	2008/12/19	JJE

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8991
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	0.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample BI2169-01: F1BTEX and (F1+F2) Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8E8991

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1704576	JJE	Method Blank	o-Terphenyl	2008/12/18		95	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/18	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2008/12/18	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2008/12/18	<100		ug/L	
1704838	JBW	Method Blank	Dissolved Lead (Pb)	2008/12/22	<0.5		ug/L	
1704990	GRU	Method Blank	1,4-Difluorobenzene	2008/12/18		106	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		97	%	70 - 130
			D10-Ethylbenzene	2008/12/18		106	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		111	%	70 - 130
			Benzene	2008/12/18	<0.2		ug/L	
			Toluene	2008/12/18	<0.2		ug/L	
			Ethylbenzene	2008/12/18	<0.2		ug/L	
			o-Xylene	2008/12/18	<0.2		ug/L	
			p+m-Xylene	2008/12/18	<0.4		ug/L	
			Total Xylenes	2008/12/18	<0.4		ug/L	
			F1 (C6-C10)	2008/12/18	<100		ug/L	
			F1 (C6-C10) - BTEX	2008/12/18	<100		ug/L	
1705719	JBW	Method Blank	Dissolved Lead (Pb)	2008/12/19	<0.5		ug/L	
1704990	GRU	RPD [BI2168-04]	Benzene	2008/12/18	NC		%	40
			Toluene	2008/12/18	1.7		%	40
			Ethylbenzene	2008/12/18	NC		%	40
			o-Xylene	2008/12/18	4.6		%	40
			p+m-Xylene	2008/12/18	7.5		%	40
			Total Xylenes	2008/12/18	6.5		%	40
			F1 (C6-C10)	2008/12/18	NC		%	40
			F1 (C6-C10) - BTEX	2008/12/18	NC		%	40
1704576	JJE	RPD [BI2169-02]	F2 (C10-C16 Hydrocarbons)	2008/12/19	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2008/12/19	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2008/12/19	NC		%	50
			F3 + F4	2008/12/19	NC		%	50
		MATRIX SPIKE [BI2168-02]	o-Terphenyl	2008/12/19		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/19		100	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/12/19		100	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/12/19		100	%	60 - 130
1704990	GRU	MATRIX SPIKE [BI2168-04]	1,4-Difluorobenzene	2008/12/18		102	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		95	%	70 - 130
			D10-Ethylbenzene	2008/12/18		102	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		110	%	70 - 130
			Benzene	2008/12/18		92	%	70 - 130
			Toluene	2008/12/18		93	%	70 - 130
			Ethylbenzene	2008/12/18		96	%	70 - 130
			o-Xylene	2008/12/18		92	%	70 - 130
			p+m-Xylene	2008/12/18		93	%	70 - 130
			F1 (C6-C10)	2008/12/18		71	%	70 - 130
1704576	JJE	LCS	o-Terphenyl	2008/12/19		101	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/19		100	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/12/19		100	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/12/19		100	%	60 - 130
1704838	JBW	LCS	Dissolved Lead (Pb)	2008/12/22		95	%	85 - 115
1704990	GRU	LCS	1,4-Difluorobenzene	2008/12/18		104	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		97	%	70 - 130
			D10-Ethylbenzene	2008/12/18		111	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		113	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report (Continued)

Maxxam Job Number: A8E8991

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1704990	GRU	LCS	Benzene	2008/12/18		89	%	70 - 130
			Toluene	2008/12/18		92	%	70 - 130
			Ethylbenzene	2008/12/18		97	%	70 - 130
			o-Xylene	2008/12/18		94	%	70 - 130
			p+m-Xylene	2008/12/18		95	%	70 - 130
			F1 (C6-C10)	2008/12/18		102	%	70 - 130
1705719	JBW	LCS	Dissolved Lead (Pb)	2008/12/19		96	%	85 - 115

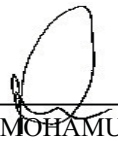
NC = Non-calculable
RPD = Relative Percent Difference

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

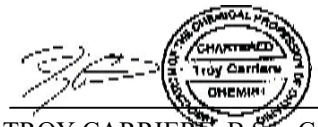
Maxxam Job #: A8E8991

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



ABDI MOHAMUD, Senior Analyst

MAMDOUH SALIB, Analyst, Hydrocarbons



TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 11782

COMPANY NAME:	PH #: 905-820-1210
O'Connor Associates(OA)	FAX #: 905-820-1221
COMPANY ADDRESS: 3715 Laird Rd., Ste. 100 Mississauga, Ont L5L 0A3	CLIENT PROJECT ID: (#) 10-8518L00
SAMPLER NAME (PRINT): S. Della Rossa	PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD (dissolved - field filtered)	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	~~BH6~~ SW		~~GW~~ SW																					
2	BH7	BI2168	GW	8	08/12/11	13:15	✓	✓	✓					✓										
3	OA1	BI2169	GW	8	08/12/11	14:30	✓	✓	✓					✓										
4																								
5																								
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave., Nepean ~~Kanata~~ SW

MAXXAM TASK ORDER #: 1106522

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- Res. / Park / Inst.
- Coarse
- Table 2

SPECIAL INSTRUCTIONS:
- Test samples as per TOR

MAXXAM JOB #: A8E8991

SAMPLES ENTERED BY: (illegible) / AS

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	YES	0.1/0°C	

TURNAROUND TIMES

SOIL/WATER		AIR – SUMMA CANISTERS	
Standard	(5 days) ☒	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
S. Della Rossa	08/12/12	21:00	DAVID CHAN	2008/12/13	0825

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 12/11/2008

Location: 1545 Woddroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8E8991

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*- all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD	X			
Matrix Spike Recovery	X			
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD	X			*- all field QC have met acceptance criteria*

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature):

Date: 01/06/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 22454

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8993
Received: 2008/12/13, 08:25

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 22454

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8993
Received: 2008/12/13, 08:25

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

Encryption Key

Akruti Atawala
22 Dec 2008 09:22:04 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8E8993
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		BI2171	BI2172		
Sampling Date		2008/12/11 14:30	2008/12/11 18:00		
COC Number		22454	22454		
	Units	**BH3W**	**BH4W**	**RDL**	**QC Batch**
Benzene	ug/L	290	<0.2	0.2	1704804
Toluene	ug/L	25	<0.2	0.2	1704804
Ethylbenzene	ug/L	120	<0.2	0.2	1704804
o-Xylene	ug/L	72	<0.2	0.2	1704804
p+m-Xylene	ug/L	180	<0.4	0.4	1704804
Total Xylenes	ug/L	250	<0.4	0.4	1704804
F1 (C6-C10)	ug/L	1200	<100	100	1704804
F1 (C6-C10) - BTEX	ug/L	510	<100	100	1704804
F2 (C10-C16 Hydrocarbons)	ug/L	160	<100	100	1704643
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	1704643
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	1704643
Reached Baseline at C50	ug/L	Yes	Yes		1704643
F1 + F2	ug/L	670	<100	100	1704643
F3 + F4	ug/L	<100	<100	100	1704643
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	107	106		1704643
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	102	100		1704804
4-Bromofluorobenzene	%	100	98		1704804
D10-Ethylbenzene	%	119	118		1704804
D4-1,2-Dichloroethane	%	97	97		1704804

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A8E8993
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

LEAD (DISSOLVED) IN WATER

Maxxam ID		BI2171	BI2172		
Sampling Date		2008/12/11 14:30	2008/12/11 18:00		
COC Number		22454	22454		
	Units	**BH3W**	**BH4W**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	<0.5	0.5	1705643

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8993
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BI2171 **Collected** 2008/12/11
Sample ID BH3W **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704804	2008/12/18	2008/12/18	AGA
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704643	2008/12/18	2008/12/19	BLZ
Dissolved Metals by ICPMS	ICP/MS	1705643	N/A	2008/12/19	HRE

Maxxam ID BI2172 **Collected** 2008/12/11
Sample ID BH4W **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704804	2008/12/18	2008/12/18	AGA
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704643	2008/12/18	2008/12/19	BLZ
Dissolved Metals by ICPMS	ICP/MS	1705643	N/A	2008/12/19	HRE

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8993
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	0.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

BH3W:
- 1 of 1x1L amber glass bottle for F4G analysis contains 1.0cm of sediment.
- 2 of 2x500mL amber glass bottle for F2-F4 analysis contains 1.1cm of sediment.

BH4W:
- 1 of 1x1L amber glass bottle for F4G analysis contains 1.0cm of sediment.
- 1 of 2x500mL amber glass bottle for F2-F4 analysis contains 1.1cm of sediment.
- 2 of 2x500mL amber glass bottle for F2-F4 analysis contains 1.2cm of sediment.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8E8993

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1704643	BLZ	Method Blank	o-Terphenyl	2008/12/18		106	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/18	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2008/12/18	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2008/12/18	<100		ug/L	
1704804	AGA	Method Blank	1,4-Difluorobenzene	2008/12/18		105	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		99	%	70 - 130
			D10-Ethylbenzene	2008/12/18		124	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		102	%	70 - 130
			Benzene	2008/12/18	<0.2		ug/L	
			Toluene	2008/12/18	<0.2		ug/L	
			Ethylbenzene	2008/12/18	<0.2		ug/L	
			o-Xylene	2008/12/18	<0.2		ug/L	
			p+m-Xylene	2008/12/18	<0.4		ug/L	
			Total Xylenes	2008/12/18	<0.4		ug/L	
			F1 (C6-C10)	2008/12/18	<100		ug/L	
			F1 (C6-C10) - BTEX	2008/12/18	<100		ug/L	
1705643	HRE	Method Blank	Dissolved Lead (Pb)	2008/12/19	<0.5		ug/L	
1704643	BLZ	LCS	o-Terphenyl	2008/12/19		107	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/19		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/12/19		96	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/12/19		96	%	60 - 130
1704804	AGA	LCS	1,4-Difluorobenzene	2008/12/18		103	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		100	%	70 - 130
			D10-Ethylbenzene	2008/12/18		125	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		102	%	70 - 130
			Benzene	2008/12/18		86	%	70 - 130
			Toluene	2008/12/18		89	%	70 - 130
			Ethylbenzene	2008/12/18		95	%	70 - 130
			o-Xylene	2008/12/18		93	%	70 - 130
			p+m-Xylene	2008/12/18		94	%	70 - 130
			F1 (C6-C10)	2008/12/18		103	%	70 - 130
1705643	HRE	LCS	Dissolved Lead (Pb)	2008/12/19		103	%	85 - 115

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A8E8993

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

JEEVARAJ JEEVARATRNAM, Senior Analyst

SUZANA POPOVIC, Supervisor, Hydrocarbons

TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 22454

COMPANY NAME: O'Connor Assoc. (OA)
PH #: 905.820.1210
FAX #: 905.820.1221
COMPANY ADDRESS: 3715 Laird Rd., Ste. 100 Mississauga, ON L5L 0A3
CLIENT PROJECT ID: (#) 10-8518L00
SAMPLER NAME (PRINT): S. DellaRossa
PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD (dissolved - field filtered)	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	High sediment content - Proceed with analysis as is - Run with sediment				
1	BH3W	BI2171	GW	8	08/12/11	14:30	✓	✓	✓					✓											X				
2	BH4W	BI2172	GW	8	08/12/11	18:00	✓	✓	✓					✓											X				
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Nepean
MAXXAM TASK ORDER #: 11061522
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- Res./Park/Inst.
- Coarse
- Table 2

SPECIAL INSTRUCTIONS: Test Samples as per TDG.

MAXXAM JOB #: A8E8993
SAMPLES ENTERED BY: (pic) / AB

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 0/0/1°C	AVG YES	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
S. Della Rossa S. Della Rossa	08/12/12	21:00	[signature] DAVID CHAN	2008/12/13	0825

TURNAROUND TIMES

SOIL WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	☒	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 11/12/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8E8993

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			- *all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Sediment present in 1lL Gravimtertric and 500ml samples bottles for both BH3W and BH4W.

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature):

Date: 01/05/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11795

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8994
Received: 2008/12/13, 08:25

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11795

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8994
Received: 2008/12/13, 08:25

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

Encryption Key

Akruti Atawala
22 Dec 2008 15:43:15 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8E8994
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		BI2173	BI2174		
Sampling Date		2008/12/11 10:15	2008/12/11 14:30		
COC Number		11795	11795		
	Units	**BH2**	**BH3**	**RDL**	**QC Batch**
Benzene	ug/L	0.6	320	0.2	1704804
Toluene	ug/L	1.0	63	0.2	1704804
Ethylbenzene	ug/L	0.7	190	0.2	1704804
o-Xylene	ug/L	1.2	120	0.2	1704804
p+m-Xylene	ug/L	2.2	360	0.4	1704804
Total Xylenes	ug/L	3.4	490	0.4	1704804
F1 (C6-C10)	ug/L	<100	1800	100	1704804
F1 (C6-C10) - BTEX	ug/L	<100	700	100	1704804
F2 (C10-C16 Hydrocarbons)	ug/L	<100	160	100	1704643
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	1704643
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	1704643
Reached Baseline at C50	ug/L	Yes	Yes		1704643
F1 + F2	ug/L	<100	860	100	1704643
F3 + F4	ug/L	<100	<100	100	1704643
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	108	110		1704643
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	101	102		1704804
4-Bromofluorobenzene	%	99	100		1704804
D10-Ethylbenzene	%	120	120		1704804
D4-1,2-Dichloroethane	%	96	98		1704804

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A8E8994
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

LEAD (DISSOLVED) IN WATER

Maxxam ID		BI2173	BI2174		
Sampling Date		2008/12/11 10:15	2008/12/11 14:30		
COC Number		11795	11795		
	Units	**BH2**	**BH3**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	29	<0.5	0.5	1704838

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8994
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BI2173 **Collected** 2008/12/11
Sample ID BH2 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704804	2008/12/18	2008/12/18	AGA
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704643	2008/12/18	2008/12/19	BLZ
Dissolved Metals by ICPMS	ICP/MS	1704838	N/A	2008/12/22	JBW

Maxxam ID BI2174 **Collected** 2008/12/11
Sample ID BH3 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704804	2008/12/18	2008/12/18	AGA
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704643	2008/12/18	2008/12/19	BLZ
Dissolved Metals by ICPMS	ICP/MS	1704838	N/A	2008/12/22	JBW

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8994
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8E8994

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1704643	BLZ	Method Blank	o-Terphenyl	2008/12/18		106	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/18	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2008/12/18	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2008/12/18	<100		ug/L	
1704804	AGA	Method Blank	1,4-Difluorobenzene	2008/12/18		105	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		99	%	70 - 130
			D10-Ethylbenzene	2008/12/18		124	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		102	%	70 - 130
			Benzene	2008/12/18	<0.2		ug/L	
			Toluene	2008/12/18	<0.2		ug/L	
			Ethylbenzene	2008/12/18	<0.2		ug/L	
			o-Xylene	2008/12/18	<0.2		ug/L	
			p+m-Xylene	2008/12/18	<0.4		ug/L	
			Total Xylenes	2008/12/18	<0.4		ug/L	
			F1 (C6-C10)	2008/12/18	<100		ug/L	
			F1 (C6-C10) - BTEX	2008/12/18	<100		ug/L	
1704838	JBW	Method Blank	Dissolved Lead (Pb)	2008/12/22	<0.5		ug/L	
1704643	BLZ	LCS	o-Terphenyl	2008/12/19		107	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/19		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/12/19		96	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/12/19		96	%	60 - 130
1704804	AGA	LCS	1,4-Difluorobenzene	2008/12/18		103	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		100	%	70 - 130
			D10-Ethylbenzene	2008/12/18		125	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		102	%	70 - 130
			Benzene	2008/12/18		86	%	70 - 130
			Toluene	2008/12/18		89	%	70 - 130
			Ethylbenzene	2008/12/18		95	%	70 - 130
			o-Xylene	2008/12/18		93	%	70 - 130
			p+m-Xylene	2008/12/18		94	%	70 - 130
			F1 (C6-C10)	2008/12/18		103	%	70 - 130
1704838	JBW	LCS	Dissolved Lead (Pb)	2008/12/22		95	%	85 - 115

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A8E8994

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

JEEVARAJ JEEVARATRNAM, Senior Analyst

SUZANA POPOVIC, Supervisor, Hydrocarbons

TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 11795

COMPANY NAME: O'Connor Associates (OA)
PH #: 905-820-1210
FAX #: 905-820-1221
COMPANY ADDRESS: 3715 Laird Rd., Ste 100 Mississauga, Ont L5L 0A3
CLIENT PROJECT ID: (#) 10-8518L00
SAMPLER NAME (PRINT): S. Della Rossa
PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD (dissolved - field filtered)	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	High sediment content - Proceed with analysis as is - Run with sediment				
1	~~BH1~~ SMD		~~[illegible]~~ SMD																										
2	BH2	BI2173	GW SMD	8	08/12/11	10:15	✓	✓	✓					✓											X				
3	BH3	BI2174	GW SMD	8	08/12/11	14:30	✓	✓	✓					✓											X				
4																													
5																													
6																													
7																													
8																													
9																													
10																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Nepean SMD
MAXXAM TASK ORDER #: 11061522
IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- Res. / Park / Inst.
- Coarse
- Table 2

SPECIAL INSTRUCTIONS:
- Test samples as per TDG

MAXXAM JOB #: A8E8994
SAMPLES ENTERED BY: [illegible] / AB

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 1/1/1°C	AVG	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
S. Della Rossa S. Della Rossa	08/12/12	21:00	[signature] DAVID CHAN	2008/12/13	0825

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	☒	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 12/11/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8E8994

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			- *all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	- *no lab submission*
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	N/A
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature): S. Della Rossa

Date: 01/06/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11783

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8996
Received: 2008/12/13, 08:25

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11783

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E8996
Received: 2008/12/13, 08:25

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

Encryption Key

Akruti Atawala
22 Dec 2008 15:41:47 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8E8996
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		BI2177		BI2178		
Sampling Date		2008/12/11 18:00		2008/12/11 12:00		
COC Number		11783		11783		
	Units	**BH4**	**QC Batch**	**BH5**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	1705643	<0.5	0.5	1704838

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8996
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2177		BI2178		
Sampling Date		2008/12/11 18:00		2008/12/11 12:00		
COC Number		11783		11783		
	Units	**BH4**	**RDL**	**BH5**	**RDL**	**QC Batch**
Benzene	ug/L	<0.2	0.2	41	10	1704990
Toluene	ug/L	<0.2	0.2	61	10	1704990
Ethylbenzene	ug/L	<0.2	0.2	2500	10	1704990
o-Xylene	ug/L	<0.2	0.2	390	10	1704990
p+m-Xylene	ug/L	<0.4	0.4	8100	20	1704990
Total Xylenes	ug/L	<0.4	0.4	8500	20	1704990
F1 (C6-C10)	ug/L	<100	100	20000	5000	1704990
F1 (C6-C10) - BTEX	ug/L	<100	100	9100	5000	1704990
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	1200	100	1704669
F3 (C16-C34 Hydrocarbons)	ug/L	<100	100	<100	100	1704669
F4 (C34-C50 Hydrocarbons)	ug/L	<100	100	<100	100	1704669
Reached Baseline at C50	ug/L	Yes		Yes		1704669
F1 + F2	ug/L	<100	100	10000	5000	1704669
F3 + F4	ug/L	<100	100	<100	100	1704669
Extraction Surrogate Recovery (%)						
o-Terphenyl	%	103		101		1704669
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	108		102		1704990
4-Bromofluorobenzene	%	103		100		1704990
D10-Ethylbenzene	%	108		108		1704990
D4-1,2-Dichloroethane	%	119		111		1704990

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8996
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BI2177 **Collected** 2008/12/11
Sample ID BH4 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704990	2008/12/18	2008/12/19	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704669	2008/12/18	2008/12/19	DPO
Dissolved Metals by ICPMS	ICP/MS	1705643	N/A	2008/12/19	HRE

Maxxam ID BI2178 **Collected** 2008/12/11
Sample ID BH5 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1704990	2008/12/18	2008/12/19	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704669	2008/12/18	2008/12/19	DPO
Dissolved Metals by ICPMS	ICP/MS	1704838	N/A	2008/12/22	JBW

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E8996
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8E8996

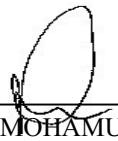
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1704669	DPO	Method Blank	o-Terphenyl	2008/12/19		101	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/19	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2008/12/19	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2008/12/19	<100		ug/L	
1704838	JBW	Method Blank	Dissolved Lead (Pb)	2008/12/22	<0.5		ug/L	
1704990	GRU	Method Blank	1,4-Difluorobenzene	2008/12/18		106	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		97	%	70 - 130
			D10-Ethylbenzene	2008/12/18		106	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		111	%	70 - 130
			Benzene	2008/12/18	<0.2		ug/L	
			Toluene	2008/12/18	<0.2		ug/L	
			Ethylbenzene	2008/12/18	<0.2		ug/L	
			o-Xylene	2008/12/18	<0.2		ug/L	
			p+m-Xylene	2008/12/18	<0.4		ug/L	
			Total Xylenes	2008/12/18	<0.4		ug/L	
			F1 (C6-C10)	2008/12/18	<100		ug/L	
			F1 (C6-C10) - BTEX	2008/12/18	<100		ug/L	
1705643	HRE	Method Blank	Dissolved Lead (Pb)	2008/12/19	<0.5		ug/L	
1704669	DPO	MATRIX SPIKE						
		[BI2178-02]	o-Terphenyl	2008/12/18		104	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/18		95	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/12/18		95	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/12/18		95	%	60 - 130
		LCS	o-Terphenyl	2008/12/18		105	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/18		88	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/12/18		88	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2008/12/18		88	%	60 - 130
1704838	JBW	LCS	Dissolved Lead (Pb)	2008/12/22		95	%	85 - 115
1704990	GRU	LCS	1,4-Difluorobenzene	2008/12/18		104	%	70 - 130
			4-Bromofluorobenzene	2008/12/18		97	%	70 - 130
			D10-Ethylbenzene	2008/12/18		111	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/18		113	%	70 - 130
			Benzene	2008/12/18		89	%	70 - 130
			Toluene	2008/12/18		92	%	70 - 130
			Ethylbenzene	2008/12/18		97	%	70 - 130
			o-Xylene	2008/12/18		94	%	70 - 130
			p+m-Xylene	2008/12/18		95	%	70 - 130
			F1 (C6-C10)	2008/12/18		102	%	70 - 130
1705643	HRE	LCS	Dissolved Lead (Pb)	2008/12/19		103	%	85 - 115

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

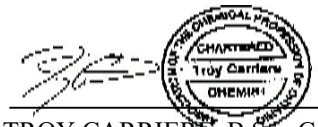
Maxxam Job #: A8E8996

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



ABDI MOHAMUD, Senior Analyst

JEEVARAJ JEEVARATRNAM, Senior Analyst



TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 11783

COMPANY NAME:	PH #: 905-820-1210
O'Connor Associates (OA)	FAX #: 905-820-1221
COMPANY ADDRESS: 3715 Laird Rd., Ste. 100 Mississauga, Ont. L5L 0A3	CLIENT PROJECT ID: (#) 10-8518 L00
SAMPLER NAME (PRINT): S. Della Rossa	PROJECT MANAGER: David Kantor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD (dissolved - field filtered)	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	High Sediment - Proceed w/ Run with solvent as IS
1	BH4	BI2177	GW SW	8	08/12/11	18:00	✓	✓	✓					✓											✓
2	BH5	BI2178	GW SW	8	08/12/11	12:00	✓	✓	✓					✓											
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

IOL SITE LOCATION: 1545 Woodroffe Ave., Nepean SW

MAXXAM TASK ORDER #: 11061522

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- Res. / Park / Inst.
- Coarse
- Table 2

SPECIAL INSTRUCTIONS:
- Test samples as per TOG

MAXXAM JOB #: A8E8996

SAMPLES ENTERED BY: (mc) / AYS

COOLER ID	CUSTODY SEAL	TEMP	AVG
1	YES	2/1/0°C	

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☒	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
S. Della Rossa S. Della Rossa	08/12/12	21:00	DAVID CHAN	2008/12/13	0825

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 12/11/2008

Location: 1545 Woddroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8E8996

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			- *all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD			X	
Matrix Spike Recovery	X			
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

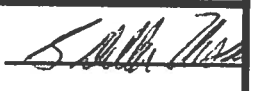
Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature): 

Date: 01/06/2009

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11784

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E9006
Received: 2008/12/13, 08:25

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00
Your C.O.C. #: 11784

Attention: David Kantor
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2008/12/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8E9006
Received: 2008/12/13, 08:25

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

Encryption Key

Akruti Atawala
22 Dec 2008 16:23:21 -05:00

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

AKRUTI ATAWALA, Project Manager
Email: akruti.atawala@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5755

==========

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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

Maxxam Job #: A8E9006
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		BI2211		BI2213		
Sampling Date		2008/12/12 21:00		2008/12/11 16:45		
COC Number		11784		11784		
	Units	**TRIP BLANK**	**QC Batch**	**QA2**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	1704838	<0.5	0.5	1705033

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BI2214		
Sampling Date		2008/12/11 16:45		
COC Number		11784		
	Units	**QA3**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	0.5	1704838

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E9006
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2211	BI2212	BI2213		
Sampling Date		2008/12/12 21:00	2008/11/10	2008/12/11 16:45		
COC Number		11784	11784	11784		
	Units	**TRIP BLANK**	**TRIP SPIKE**	**QA2**	**RDL**	**QC Batch**
Benzene	ug/L	<0.2	82	<0.2	0.2	1701607
Toluene	ug/L	<0.2	85	<0.2	0.2	1701607
Ethylbenzene	ug/L	<0.2	82	<0.2	0.2	1701607
o-Xylene	ug/L	<0.2	88	<0.2	0.2	1701607
p+m-Xylene	ug/L	<0.4	85	<0.4	0.4	1701607
Total Xylenes	ug/L	<0.4		<0.4	0.4	1701607
F1 (C6-C10)	ug/L	<100		<100	100	1701607
F1 (C6-C10) - BTEX	ug/L	<100		<100	100	1701607
F2 (C10-C16 Hydrocarbons)	ug/L	<100		<100	100	1704669
F3 (C16-C34 Hydrocarbons)	ug/L	<100		<100	100	1704669
F4 (C34-C50 Hydrocarbons)	ug/L	<100		<100	100	1704669
Reached Baseline at C50	ug/L	Yes		Yes		1704669
F1 + F2	ug/L	<100		<100	100	1704669
F3 + F4	ug/L	<100		<100	100	1704669
Extraction Surrogate Recovery (%)						
o-Terphenyl	%	103		102		1704669
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	103	102	99		1701607
4-Bromofluorobenzene	%	98	97	94		1701607
D10-Ethylbenzene	%	102	106	106		1701607
D4-1,2-Dichloroethane	%	110	108	110		1701607

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: A8E9006
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2213	BI2214		
Sampling Date		2008/12/11 16:45	2008/12/11 16:45		
COC Number		11784	11784		
	Units	**QA2 Lab-Dup**	**QA3**	**RDL**	**QC Batch**
Benzene	ug/L	<0.2	<0.2	0.2	1701607
Toluene	ug/L	<0.2	<0.2	0.2	1701607
Ethylbenzene	ug/L	<0.2	<0.2	0.2	1701607
o-Xylene	ug/L	<0.2	<0.2	0.2	1701607
p+m-Xylene	ug/L	<0.4	<0.4	0.4	1701607
Total Xylenes	ug/L	<0.4	<0.4	0.4	1701607
F1 (C6-C10)	ug/L	<100	<100	100	1701607
F1 (C6-C10) - BTEX	ug/L	<100	<100	100	1701607
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	1704669
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	1704669
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	1704669
Reached Baseline at C50	ug/L	Yes	Yes		1704669
F1 + F2	ug/L	<100	<100	100	1704669
F3 + F4	ug/L	<100	<100	100	1704669
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	102	102		1704669
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	99		1701607
4-Bromofluorobenzene	%	98	99		1701607
D10-Ethylbenzene	%	103	101		1701607
D4-1,2-Dichloroethane	%	111	113		1701607

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Job #: A8E9006
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Test Summary

Maxxam ID BI2211 **Collected** 2008/12/12
Sample ID TRIP BLANK **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1701607	2008/12/15	2008/12/16	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704669	2008/12/18	2008/12/19	DPO
Dissolved Metals by ICPMS	ICP/MS	1704838	N/A	2008/12/22	JBW

Maxxam ID BI2212 **Collected** 2008/11/10
Sample ID TRIP SPIKE **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1701607	2008/12/15	2008/12/16	GRU

Maxxam ID BI2213 **Collected** 2008/12/11
Sample ID QA2 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1701607	2008/12/15	2008/12/16	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704669	2008/12/18	2008/12/19	DPO
Dissolved Metals by ICPMS	ICP/MS	1705033	N/A	2008/12/19	HRE

Maxxam ID BI2213 Dup **Collected** 2008/12/11
Sample ID QA2 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1701607	2008/12/15	2008/12/16	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704669	2008/12/18	2008/12/19	DPO

Maxxam ID BI2214 **Collected** 2008/12/11
Sample ID QA3 **Shipped** 2008/12/12
Matrix Water **Received** 2008/12/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	1701607	2008/12/15	2008/12/16	GRU
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	1704669	2008/12/18	2008/12/19	DPO
Dissolved Metals by ICPMS	ICP/MS	1704838	N/A	2008/12/22	JBW

Maxxam Job #: A8E9006
Report Date: 2008/12/22

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Package 1	0.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample BI2212-01: F1BTEX Analysis: Trip spike results are expressed as percentage of the spiked amounts.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report

Maxxam Job Number: A8E9006

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1701607	GRU	Method Blank	1,4-Difluorobenzene	2008/12/16		102	%	70 - 130
			4-Bromofluorobenzene	2008/12/16		98	%	70 - 130
			D10-Ethylbenzene	2008/12/16		105	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/16		109	%	70 - 130
			Benzene	2008/12/16	<0.2		ug/L	
			Toluene	2008/12/16	<0.2		ug/L	
			Ethylbenzene	2008/12/16	<0.2		ug/L	
			o-Xylene	2008/12/16	<0.2		ug/L	
			p+m-Xylene	2008/12/16	<0.4		ug/L	
			Total Xylenes	2008/12/16	<0.4		ug/L	
			F1 (C6-C10)	2008/12/16	<100		ug/L	
			F1 (C6-C10) - BTEX	2008/12/16	<100		ug/L	
1704669	DPO	Method Blank	o-Terphenyl	2008/12/19		101	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/19	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2008/12/19	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2008/12/19	<100		ug/L	
1704838	JBW	Method Blank	Dissolved Lead (Pb)	2008/12/22	<0.5		ug/L	
1705033	HRE	Method Blank	Dissolved Lead (Pb)	2008/12/19	<0.5		ug/L	
1701607	GRU	RPD [BI2213-04]	Benzene	2008/12/16	NC		%	40
			Toluene	2008/12/16	NC		%	40
			Ethylbenzene	2008/12/16	NC		%	40
			o-Xylene	2008/12/16	NC		%	40
			p+m-Xylene	2008/12/16	NC		%	40
			Total Xylenes	2008/12/16	NC		%	40
			F1 (C6-C10)	2008/12/16	NC		%	40
			F1 (C6-C10) - BTEX	2008/12/16	NC		%	40
1704669	DPO	RPD [BI2213-02]	F2 (C10-C16 Hydrocarbons)	2008/12/19	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2008/12/19	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2008/12/19	NC		%	50
			F1 + F2	2008/12/19	NC		%	50
			F3 + F4	2008/12/19	NC		%	50
1701607	GRU	MATRIX SPIKE [BI2213-04]	1,4-Difluorobenzene	2008/12/16		101	%	70 - 130
			4-Bromofluorobenzene	2008/12/16		99	%	70 - 130
			D10-Ethylbenzene	2008/12/16		104	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/16		110	%	70 - 130
			Benzene	2008/12/16		89	%	70 - 130
			Toluene	2008/12/16		92	%	70 - 130
			Ethylbenzene	2008/12/16		98	%	70 - 130
			o-Xylene	2008/12/16		96	%	70 - 130
			p+m-Xylene	2008/12/16		96	%	70 - 130
			F1 (C6-C10)	2008/12/16		101	%	70 - 130
		LCS	1,4-Difluorobenzene	2008/12/16		102	%	70 - 130
			4-Bromofluorobenzene	2008/12/16		96	%	70 - 130
			D10-Ethylbenzene	2008/12/16		104	%	70 - 130
			D4-1,2-Dichloroethane	2008/12/16		104	%	70 - 130
			Benzene	2008/12/16		87	%	70 - 130
			Toluene	2008/12/16		91	%	70 - 130
			Ethylbenzene	2008/12/16		95	%	70 - 130
			o-Xylene	2008/12/16		92	%	70 - 130
			p+m-Xylene	2008/12/16		91	%	70 - 130
			F1 (C6-C10)	2008/12/16		108	%	70 - 130
1704669	DPO	LCS	o-Terphenyl	2008/12/18		105	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2008/12/18		88	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2008/12/18		88	%	60 - 130

O'Connor Associates Environmental Inc
Task Order#: 11061522
Site#:
Site Location: 1545 WOODROFFE AVENUE, NEPEAN
Project #: 10-8518L00

Quality Assurance Report (Continued)

Maxxam Job Number: A8E9006

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1704669	DPO	LCS	F4 (C34-C50 Hydrocarbons)	2008/12/18		88	%	60 - 130
1704838	JBW	LCS	Dissolved Lead (Pb)	2008/12/22		95	%	85 - 115
1705033	HRE	LCS	Dissolved Lead (Pb)	2008/12/19		100	%	85 - 115

NC = Non-calculable
RPD = Relative Percent Difference

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: A8E9006

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

JEEVARAJ JEEVARATRNAM, Senior Analyst

SUZANA POPOVIC, Supervisor, Hydrocarbons

TROY CARRIERE, B.Sc., C.Chem, Scientific Specialist

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 11784

COMPANY NAME:	PH #: 905-820-1220 Sno
O'Connor Associates (OA)	FAX #: 905-820-1221
COMPANY ADDRESS:	CLIENT PROJECT ID: (#)
3715 Laird Rd., Ste 100 Mississauga, Ont- L5L 0A3	10-8518L00
SAMPLER NAME (PRINT):	PROJECT MANAGER:
S. Della Rossa	David Kanbor

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD (Dissolved - Field Filtered)	ICP METALS	ICP/MS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Trip Blank TBLK-F24W-20081119	BI2211	W	1	08/12/12	21:00			X															
2	Trip Spike TSPK-F1BW-20081110	BI2212	W	3	08/11/10		X																	
3	Trip Blank TBLK-2SOM-20081105	BI2211	W	1	08/12/12	21:00								X										
4	Trip Blank TBLK-F1BW-20081111	BI2211	W	3	08/12/12	21:00	X	X																
5	QA2	BI2213	W	8	08/12/11	16:15	X	X	X					X										
6	QA3	BI2214	W	8	08/12/11	16:45	X	X	X					X										
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave., Nepean

MAXXAM TASK ORDER #: 11061522

IOL CONTACT: Scott Wetton

REGULATORY CRITERIA / DETECTION LIMITS:
- Park / Res. / Inst.
- Course
- Table 2

SPECIAL INSTRUCTIONS:
- Test samples as per
- 5 unused "Sch 1" TAT sample bottles

MAXXAM JOB #: A8E9006

SAMPLES ENTERED BY: RLC / AS

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 0/0/1°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER			AIR - SUMMA CANISTERS		
Standard	(5 days)	☒	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
S. Della Rossa B. Della Rossa	08/12/12	21:00	DAVID CHAN	2008/12/13	0825

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: O'Connor Associates

Sampling Date: 12/11/2008

Location: 1545 Woodroffe Ave., Nepean, ON.

Laboratory : Maxxam Analytics

Consultant Project Number: 10-8518L00

Sample Submission Number: A8E9006

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	X			*- all lab QC have met acceptance criteria*
Extraction Surrogate Recovery	X			
Method Blank Concentration	X			
Matrix Duplicate RPD	X			
Matrix Spike Recovery	X			
Lab Control Sample Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	X			*- all field QC have met acceptance criteria*
Trip Blank Concentration	X			
Field Duplicate RPD			X	

Has CoA been signed off (Yes/No)?:	Yes
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	Yes
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	Yes
Were all samples analyzed within hold times (Yes/No)?:	Yes
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	Yes
Is Chain of Custody completed and signed (Yes/No)?:	Yes
Were sample temperatures acceptable when they reached lab (Yes/No)?:	Yes

Was a Data Quality Waiver (DQW) issued (Yes/No)?: No

Date Issued: _____ Date of Response: _____

Is data considered to be reliable (Yes/No)?: Yes

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): Steve Della Rossa

Data Reviewed by (Signature):

Date: 01/06/2009

APPENDIX D

MOE WELL REGISTRATION RECORD

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*
A 074590 BH#6

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 2

Master Well Owner's and Land Owner's Information

First Name	Last Name	E-mail Address
Imperial Oil		

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
10 Wynford Drive	Toronto	ON	M3C 1K5	416 444 1784

Location and Construction of the Master Well in the Cluster

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
1545 Woodroffe Ave.			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Ottawa	Ontario	K2G 1W2

UTM Coordinates: Zone | Easting | Northing — NAD 83 | 18 | 444113 | 5012097

GPS Unit Make: Garmin — Model: Etrex

Mode of Operation: ☐ Differentiated, specify ☐ Undifferentiated ☐ Averaged

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
Black	Asphalt			0	0.3
Brown	Sand			0.3	1.0
Grey	Clay & Silt			1.0	4.5
Brown	Sand			4.5	6.0

Hole Details

Depth (Metres) From	Depth (Metres) To	Diameter (Centimetres)
0	6.0	20

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, *specify*
☐ Domestic ☐ Commercial ☐ Dewatering
☐ Livestock ☐ Municipal ☑ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☐ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☑ Other, *specify* HSA
☐ Rotary (Air) ☐ Driving

Status of Well

☑ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, *specify*
☐ Alteration (Construction) ☐ Abandoned, other, *specify*

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	Depth (Metres) To
5.1	PVC	Sched 40	0	6.0

No Casing and Screen Used

Open Hole ☐ Yes ☑ No

Static Water Level Test

Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☑ Plastic

Outside Diameter (Centimetres)	Slot No.
5.8	10

Water Details

Water found at Depth	Kind of Water
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected ☐ Yes ☑ No If no, provide reason: Monitoring well

Date Master Well Completed *(yyyy/mm/dd)*: 2008/11/18

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	Depth Set at (Metres) To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0	4.3	Bentonite	
1.0		Concrete	

Cluster Information *(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)*

Total Wells in Cluster	Please indicate Number of Cluster Well Information Log Sheets Submitted
7	1

Total Wells on this Property: Unknown

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.

☑ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

Signature of Technician/Contractor | Date *(yyyy/mm/dd)*: 2009/04/03

Master Well Owner's/Land Owner's consent to use Cluster Form

Signature | Date *(yyyy/mm/dd)*: 2009/04/03

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
George Downing Estate Drilling	11814

Business Address (Street No./Name, number, RR)	Municipality
2 Rue Principale	Granville Sur La Roche

Province	Postal Code	Business E-mail Address
QC	J0V 1B0	downing@hawk.igs.net

Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
1 819 242 6440	Downing, Bruce

Well Technician's Licence No.	Signature of Technician	Date Submitted *(yyyy/mm/dd)*
1713		2009/04/03

Ministry Use Only

Audit No.	Well Contractor No.
M 04551	
Date Received *(yyyy/mm/dd)*	Date of Inspection *(yyyy/mm/dd)*
Remarks	

(11/2006)

© Queen's Printer for Ontario, 2006

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)* A074590

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Property Owner's Information

First Name	Last Name	Mailing Address (Street No./Name, RR)	Municipality
Imperial Oil		90 Wynford Drive	Toronto

Province	Postal Code	E-mail Address	Telephone No. (inc. area code)
ON	M3C1K5		416 441 7841

Cluster Well Information

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
1545 Woodroffe Ave				

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation
Nepean Ottawa	Ontario	K2G1W2	Garmin	Etrex	☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify:

Consent

Property Owner's Consent to use cluster form

Signature	Date (yyyy/mm/dd)
DO KC	2009/04/03

Consent to release additional information to the Director upon request

Signature of Technician/Contractor	Date (yyyy/mm/dd)
[signature]	2009/03/19

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
BH #1	18	441093	5020356	4.3	20	HSA	PVC	1.8	1.8	4.3	Bentonite				2008/11/17
BH #5	18	441110	5020373	4.4				1.8	1.8	4.4					2008/11/18
BH #7	18	441105	5020382	4.7				1.9	1.9	4.7					2008/11/18
BH #3	18	441090	5020354	6.9				4.6	4.6	6.9					2008/11/18
BH #2	18	441083	5020362	4.2				1.5	1.5	4.2					2008/11/18
BH #4	18	441085	5020361	6.9				4.6	4.6	6.9					2008/11/18
~~BH #6~~	~~18~~	~~441103~~	~~5020372~~	~~6.1~~				~~4.6~~	~~4.6~~	~~6.1~~					~~2008/11/18~~

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd	410 Rue Principale	Grenville Sur La Rouge	QC

Postal Code	Business Telephone No. (inc. area code)	Well Contractor's Licence No.	Business E-mail Address
J0V1B0	819 242 6469	1844	downing@hawk.igs.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted (yyyy/mm/dd)	Signature of Technician
Downing, Bruce	2173	2009/03/19	[signature]

Date 1st Well in Cluster Constructed (yyyy/mm/dd)	Date Last Well in Cluster Constructed (yyyy/mm/dd)
2008/11/17	2008/11/18

Ministry Use Only

Date Received (yyyy/mm/dd)	Date Inspected (yyyy/mm/dd)
Audit No. C 05157	**Remarks**

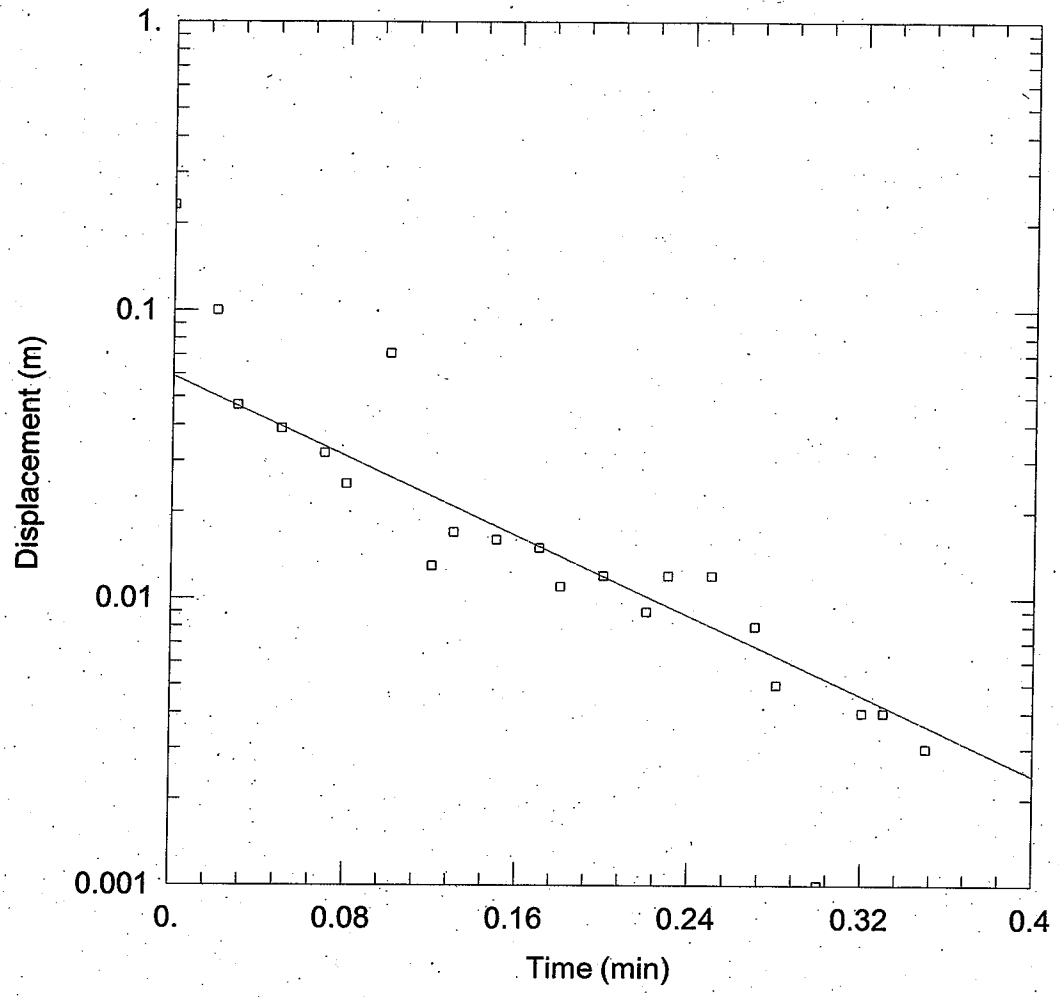
1991 (11/2006)

Well Owner's Copy

© Queen's Printer for Ontario, 2006

APPENDIX E

HYDRAULIC CONDUCTIVITY TEST DATA SHEETS



BAIL TEST #2 BH3

Data Set: R:\NaQ\Projects\IOL\10-8518L00\Slug Test Analysis\Dec 10 08\BH3\BH3 TEST#2.aqt
Date: 01/09/09 Time: 12:47:32

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T00
Location: 1545 Woodroffe Ave, Nepean,ON
Test Well: BH3
Test Date: 08/12/11

AQUIFER DATA

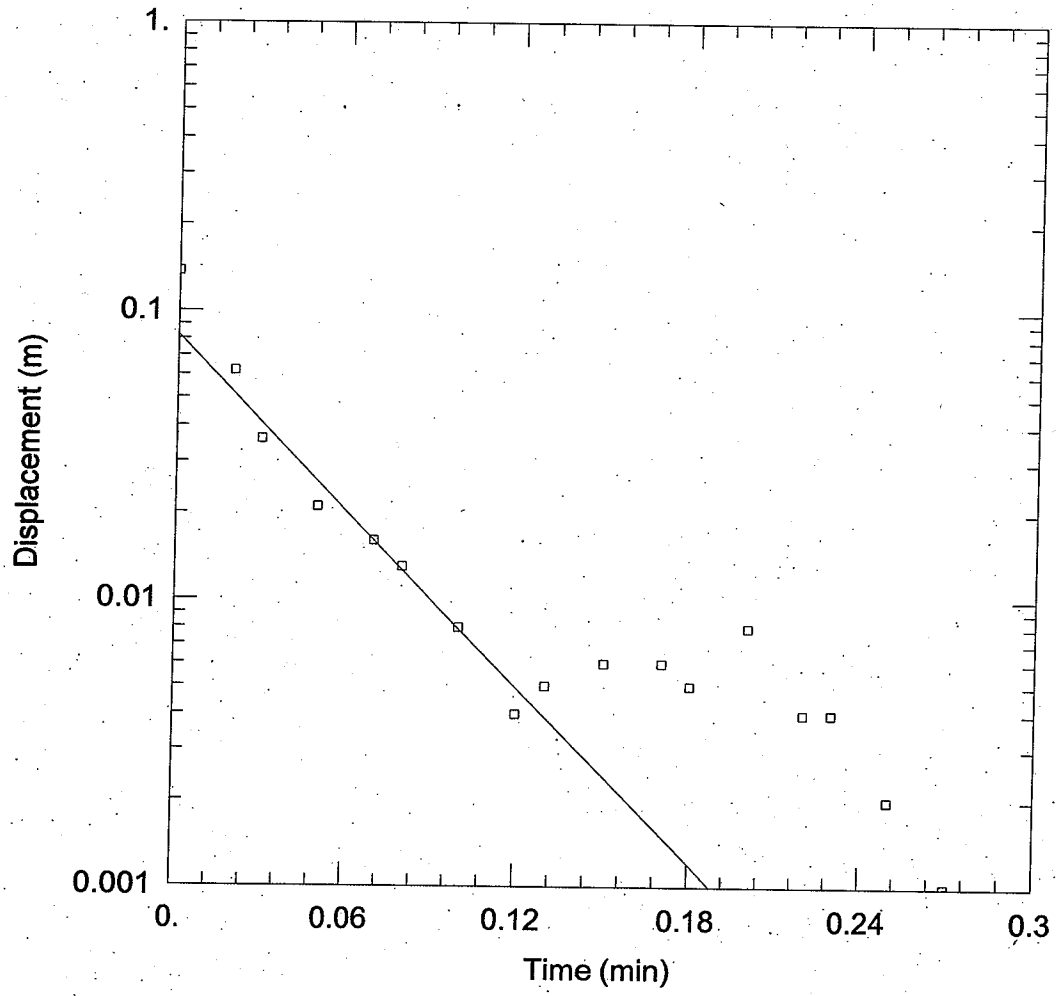
Saturated Thickness: 5. m
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH3)

Initial Displacement: 0.232 m
Total Well Penetration Depth: 1.165 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.165 m
Screen Length: 1.165 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 8.466E-5 m/sec
y0 = 0.05912 m



BAIL TEST #2 BH4

Data Set: R:\NaQ\Projects\IOL\10-8518L00\Slug Test Analysis\Dec 10 08\BH4\Bail Test #2 BH4.aqt
Date: 01/09/09 Time: 12:48:04

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T00
Location: 1545 Woodroffe Ave, Nepean,ON
Test Well: BH4
Test Date: 08/12/10

AQUIFER DATA

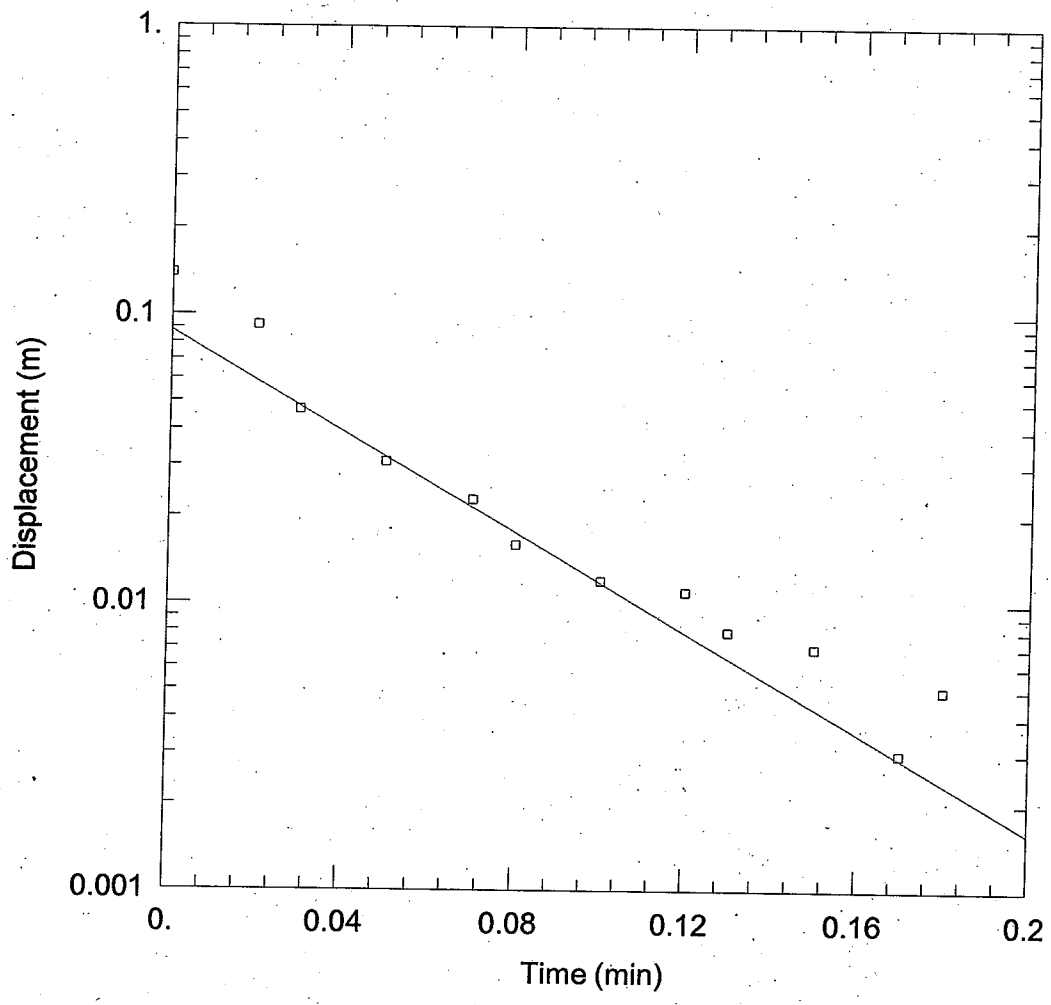
Saturated Thickness: 5. m
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH4)

Initial Displacement: 0.137 m
Total Well Penetration Depth: 1.04 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.04 m
Screen Length: 1.04 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
K = 0.0002666 m/sec
Solution Method: Bouwer-Rice
y0 = 0.08254 m



BAIL TEST #3 BH4

Data Set: R:\NaQ\Projects\IOL\10-8518L00\Slug Test Analysis\Dec 10 08\BH4\Bail Test #3 BH4.aqt
Date: 01/09/09 Time: 12:48:15

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T00
Location: 1545 Woodroffe Ave, Nepean,ON
Test Well: BH4
Test Date: 08/12/10

AQUIFER DATA

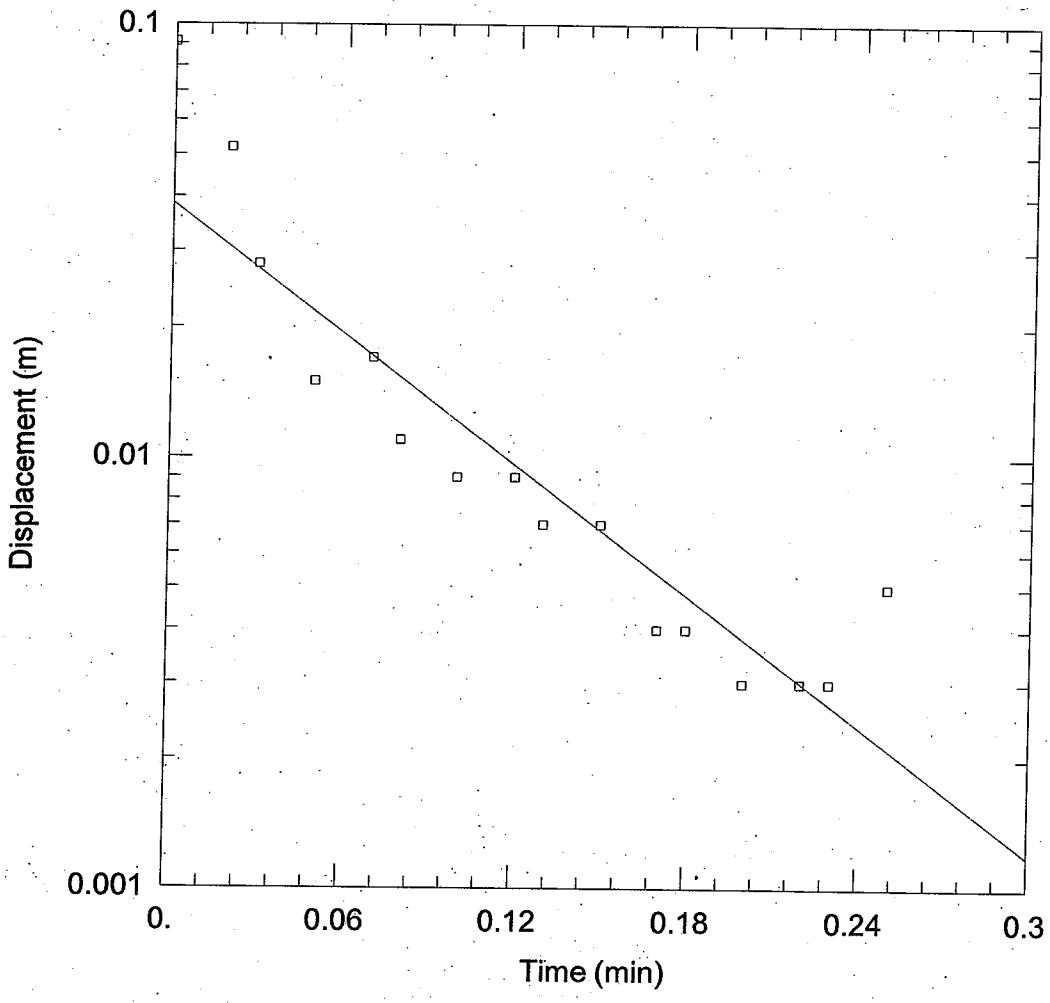
Saturated Thickness: 5. m
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH4)

Initial Displacement: 0.139 m
Total Well Penetration Depth: 1.041 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.041 m
Screen Length: 1.041 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
K = 0.0002276 m/sec
Solution Method: Bouwer-Rice
y0 = 0.08787 m



BAIL TEST #1 BH6

Data Set: R:\NaQ\Projects\IOL\10-8518L00\Slug Test Analysis\Dec 10 08\BH6\Bail test #1 BH6.aqt
Date: 01/09/09 Time: 12:48:39

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T00
Location: 1545 Woodroffe Ave, Nepean,ON
Test Well: BH6
Test Date: 08/12/10

AQUIFER DATA

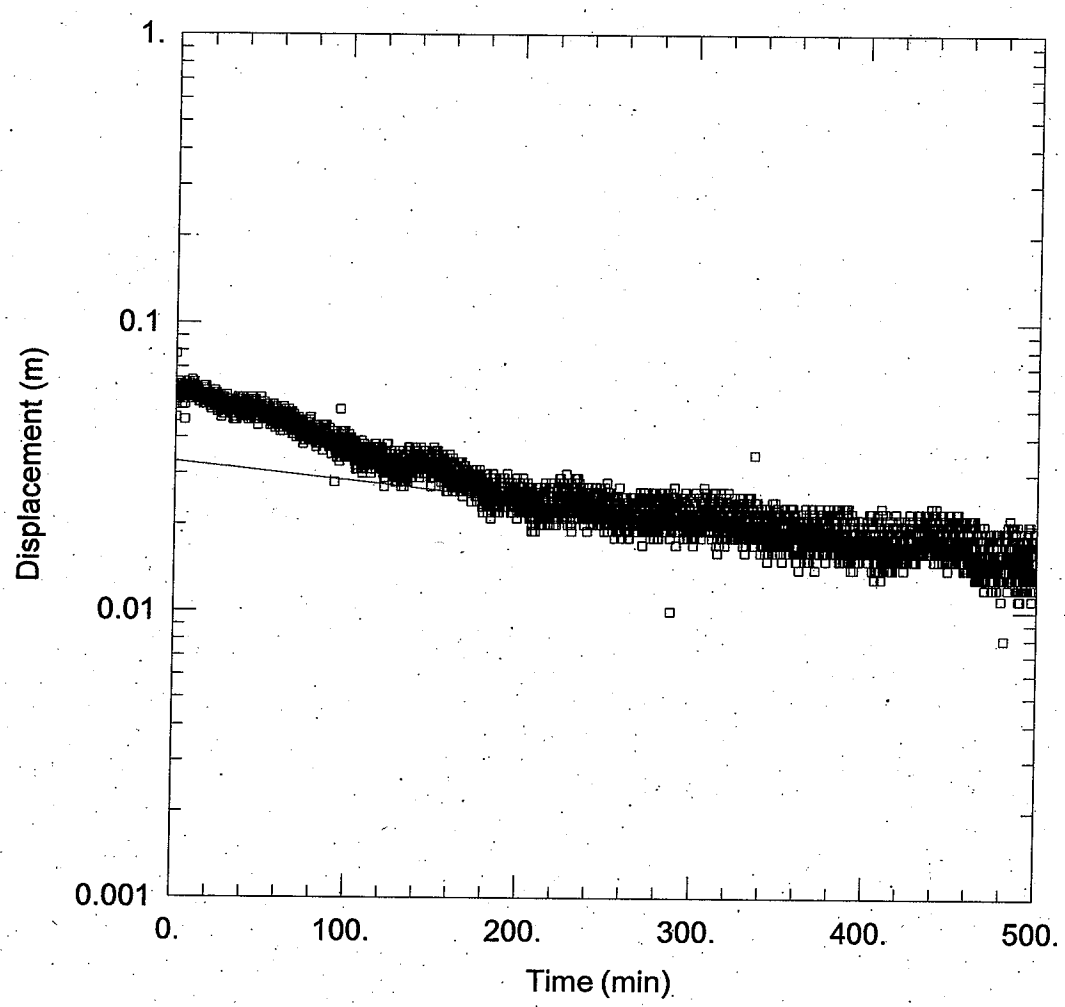
Saturated Thickness: 5. m
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH6)

Initial Displacement: 0.091 m
Total Well Penetration Depth: 0.928 m
Casing Radius: 0.0254 m
Static Water Column Height: 0.928 m
Screen Length: 0.928 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
K = 0.000141 m/sec
Solution Method: Bouwer-Rice
y0 = 0.03862 m



BAIL TEST BH7

Data Set: R:\...\Bail_test_BH7_barocorrected.aqt
Date: 01/09/09 Time: 12:46:42

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T00
Location: 1545 Woodroffe Ave, Nepean,ON
Test Well: BH7
Test Date: 08/12/12

AQUIFER DATA

Saturated Thickness: 5. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH7)

Initial Displacement: 0.078 m
Total Well Penetration Depth: 1.069 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.069 m
Screen Length: 1.069 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.674E-8 m/sec
y0 = 0.03308 m

SOIL VAPOUR ASSESSMENT
1545 WOODROFFE AVENUE
OTTAWA, ONTARIO
Location No: 88001626

Prepared for:
Imperial Oil
1 Duncan Mill Road
North York, Ontario
M3B 1Z2

Prepared by:

O'Connor Associates Environmental Inc.,
A Parsons Company
3715 Laird Road, Suite 100
Mississauga, Ontario L5L 0A3
Phone: (905) 820-1210

Ref. No.: 10-8518T02

These documents and the information contained therein are confidential - property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch. II "1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch. I "1", as such legislation may be amended from time to time.

THIS REPORT CONTAI*NS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE.*

Distribution:
1 copy – Imperial Oil Environmental Services

April 2, 2014

SUMMARY

Site	**1545 Woodroffe Avenue, Ottawa, Ontario**
Type of Facility	Esso Retail Fuel Outlet
Municipal Zoning	GM15H(9.5) – General Mixed – Use Zone, subzone 15, height restriction of 8 m
Adjacent Land Use	Residential
Aquifer Usage in 250 m Radius	None
Date(s) of Soil Gas Monitoring Well Installation	May 31, 2012 and October 15, 2013
Date(s) of Soil Gas Sampling	June 19, 2012, January 15, 2013 and October 17, 2013
Reference Standards	Soil:MOE (2011) Table 3 (non-potable) site condition standards (medium and fine textured soils, industrial/commercial/community property use) Soil Gas:MOE Modified Generic Risk Assessment Spreadsheet (April 15, 2011) for industrial/commercial/community property use
Number of Soil Gas Monitoring Wells Installed	2

SUMMARY OF SOIL GAS MONITORING WELLS:

Description	SGMW-1	SGMW-2
Depth (mbgs)	2.43	2.67
Dominant Soil Type	Gravel and sand fill, silt and sand	Sand Fill
Depth to Sand Pack (mbgs)	2.0	2.46
Screened Interval (mbgs)	2.25 to 2.43	2.62 to 2.67
Leak Test (Pass or Fail)	Passed Water and Helium Leak Tests	Passed Water and Helium Leak Tests
Exceeded Soil Vapour Screening Criteria	Yes	Yes

Notes:
m – metres
mbgs – metres below ground surface
MOE – Ontario Ministry of the Environment

TABLE OF CONTENTS

Page

SUMMARY i

LIST OF DRAWINGS iii

LIST OF TABLES iii

LIST OF APPENDICES iii

1.0 INTRODUCTION 1
- 1.1 Background 1
- 1.2 Scope of Work 1

2.0 FIELD ACTIVITIES 2
- 2.1 Borehole Daylighting 2
- 2.2 Soil Sampling 2
- 2.3 Soil Gas Monitoring Well Installation 3
- 2.4 Soil Gas Monitoring Well Leak Testing 4
- 2.5 Soil Gas Sampling 5
- 2.6 Laboratory Analyses 5
- 2.7 Quality Assurance and Quality Control 5

3.0 FINDINGS 6
- 3.1 Field Observations 6
  - 3.1.1 Stratigraphy 6
  - 3.1.2 Vapour Concentrations 6
- 3.2 Selected Criteria 6
  - 3.2.1 Soil Site Condition Standards 6
  - 3.2.2 Soil Vapour Screening Criteria 6
- 3.3 Soil Analytical Results 7
- 3.4 Soil Gas Monitoring Well Leak Testing Results 7
- 3.5 Soil Gas Analytical Results 7
- 3.6 Quality Assurance / Quality Control Results 8

4.0 SUMMARY AND CONCLUSIONS 8

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE 9

LIST OF DRAWINGS

Drawing No. 1	**Site Location Map**
Drawing No. 2	**Site Plan**
Drawing No. 3	**Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead**
Drawing No. 4	**Soil Vapour Analytical Results – Petroleum Hydrocarbon Parameters**

LIST OF TABLES

Table 1	**Helium Leak Test Data**
Table 2	**Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead**
Table 3	**Soil Vapour Analytical Results – June 19, 2012 Sampling Event - Petroleum Hydrocarbon Parameters**
Table 4	**Soil Vapour Analytical Results – January 15, 2013 Sampling Event - Petroleum Hydrocarbon Parameters**
Table 5	**Soil Vapour Analytical Results – October 17, 2013 Sampling Event - Petroleum Hydrocarbon Parameters**

LIST OF APPENDICES

Appendix A	**Borehole Logs**
Appendix B	**Laboratory Certificates of Analysis – Soil and Soil Vapour**
Appendix C	**Quality Assurance and Quality Control**

1.0 INTRODUCTION

O'Connor Associates Environmental Inc., a Parsons Company (Parsons) was retained by Imperial Oil to conduct a soil vapour assessment at the Esso retail fuel outlet located at 1545 Woodroffe Avenue, Ottawa, Ontario (the Site).

The purpose of the assessment was to assess for potential contaminants of concern in the subsurface soil gas. The field work was conducted between May 31, 2012 and October 17, 2013.

1.1 BACKGROUND

The Site location is shown on Drawing No. 1, and a Site plan showing the soil gas monitoring well (SGMW) locations are presented on Drawing No. 2.

Imperial Oil operated the Site as a service station/retail fuel outlet since 1959. Prior to this, the Site was used for agricultural purposes. The original service station configuration was generally comprised of a service station building, and a canopy and two pump islands in the southwest corner of the Site. These facilities were decommissioned in the 1980s and replaced with six gasoline and diesel underground storage tanks (USTs), one furnace oil UST, three pump islands, a carwash and a new repair garage. The present Site configuration was similar to the prior configuration with the following changes: the USTs were removed and replaced with a new tank nest further to the north that was comprised of three 46 000 L gasoline USTs and one 22700 L diesel UST. According to the City of Ottawa, the Site is zoned as GM15H(9.5) – General Mixed – Use Zone, subzone 15, height restriction of 8 m.

1.2 SCOPE OF WORK

The scope of work was to perform the following activities:

- Advance two shallow boreholes (SGMW-1 and SGMW-2) west of the conveniece store kiosk and install a soil gas monitoring well (SGMW) in each.
- Collect soil samples from one borehole for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (BTEX); petroleum hydrocarbon (PHC) fractions F1 to F4; hexane; and lead.
- Conduct leak tests and collect soil gas samples from the SGMWs for laboratory analysis of benzene, toluene, ethylbenzene and xylenes (BTEX) and aliphatic and aromatic hydrocarbon fractions.
- Prepare a report that describes the field activities and the results of the assessment.

2.0 FIELD ACTIVITIES

Prior to proceeding with the subsurface investigation, various utility representatives and a private utility locating contractor identified underground utility locations.

All field procedures were conducted in accordance with the Ontario Ministry of the Environment (MOE) *Guidance for Completing Phase Two Environmental Site Assessments* under Ontario Regulation 153/04 (as amended).

The soil gas samples were collected in accordance with standard industry practice.

2.1 BOREHOLE DAYLIGHTING

Veolia Environmental Services was retained by Parsons to daylight the boreholes (SGMW-1 and SGMW-2) to the west of the convenience store. The boreholes were daylighted using a water lance vacuum excavator. SGMW-1 was daylighted on May 31, 2012 to 2.5 m below ground surface (mbgs) and SGMW-2 was daylighted on October 15, 2013 to 3.30 mbgs.

The slurry was subsequently transported off-site for disposal at the Veolia facility in Ottawa, Ontario.

The SGMW locations are shown on Drawing No. 2.

2.2 SOIL SAMPLING

Soil sampling was conducted at regular depth intervals in the boreholes using a stainless steel spoon sampling device. The samples were collected from the device using a clean stainless steel trowel and nitrile gloves. The sampling equipment was washed prior to collection of each soil screening sample. Specifically, any excess soil was brushed off prior to scrubbing the sampling equipment with soapy water, rinsing with distilled water and allowing it to air dry. Each soil sample was immediately sealed in a clean plastic bag for screening, which included determining textural description, visual evidence of impact (e.g., staining or free product), and measurement of the sample combustible headspace vapour concentration (soil vapour concentration). Select soil samples were immediately split and one portion of the sample was sealed in a clean plastic bag for screening and the remainder of the sample was promptly placed in containers supplied by the laboratory and stored in coolers with ice for possible analysis.

The soil samples submitted for analysis of BTEX, PHC fraction F1 and hexane were collected in two septum topped 40 mL vials pre-charged with 10 mL of methanol. Approximately 5 g of soil was collected from the stainless steel spoon sampling device using a clean disposable syringe and nitrile gloves and placed in each methanol filled sampling vial. Samples for the remaining parameters were collected in either 60 mL or 120 mL glass jars with Teflon lined lids.

The soil vapour concentrations were measured using a Gastech Model 1238ME or RKI Eagle combustible gas detector having a minimum detection level of 5 parts per million by volume (ppmv). The gas detector was operated in the methane elimination mode.

The calibration of the Gastechtor was checked daily in the field. The procedure involved checking the instrument response against both a low [nominal 400 ppmv] and high [nominal 43% lower explosive limit] concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument readings were within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if either of the readings was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field, until the instrument readings were within ±10% for both gas standards.

The calibration of the RKI EAGLE was checked daily in the field. The procedure involved checking the instrument response against a nominal 43% lower explosive limit (% LEL) concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument reading was within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if the reading was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field until the instrument reading was within ±10% of the gas standard.

Soil sampling details are presented on the borehole logs in Appendix A.

Two samples from one borehole (SGMW-1) were selected for laboratory analyses, based on sample, visual observations and/or field screening results. In general, one worst case soil sample, based on field screening results, and one deeper sample from the first apparent non-impacted zone, were submitted for laboratory analysis. The samples were stored in coolers with ice.

2.3 SOIL GAS MONITORING WELL INSTALLATION

A SGMW (SGMW-1) consisting of a 102 mm diameter polyvinyl chloride (PVC) No. 10 slot screen, measuring approximately 178 mm in length, and an un-slotted 6.35 mm diameter nylon riser was installed to 2.4 mbgs. The annular space between the PVC well screen and the wall of the borehole was backfilled with #2 silica sand to approximately 150 mm above the top of the screen, and then with hydrated fine granular bentonite to approximately 150 mm below the ground surface. The monitoring well was then finished with a flush-mount aluminum casing set in concrete grout to protect the well from damage.

A SGMW (SGMW-2) consisting of a 12.7 mm diameter polyvinyl chloride (PVC) No. 10 slot screen, measuring approximately 51 mm in length, and an un-slotted 6.35 mm diameter nylon riser was installed to 2.7 mbgs. The annular space between the PVC well screen and the wall of the borehole was backfilled with #2 silica sand to approximately 150 mm above the top of the screen, and then with hydrated fine granular bentonite to approximately 351 mm below the

ground surface. The monitoring well was then finished with a flush-mount aluminum casing set in concrete grout to protect the well from damage.

The SGMWs were installed so that the depth was at least half the distance from the source to the receptor and to ensure that it was above the water table.

The locations of the vapour probes are shown on Drawing No. 3. A typical vapour probe construction is shown in Appendix A. The well installation details are presented on the borehole logs in Appendix A.

2.4 SOIL GAS MONITORING WELL LEAK TESTING

On June 13, 2012 and October 17, 2013, prior to purging and sampling, the SGMWs were tested to confirm that the seal extending from the surface to the screened portion of the SGMWs were effective and would prevent ambient air from leaking into the SGMWs during sampling. Leak testing was conducted using a two-staged approach.

The first stage consisted of pouring water into the aluminium protective casing that was installed around the SGMW. Sufficient water was added to fill the space surrounding the un-slotted riser within the protective casing. The initial water level was recorded. If the water level remained unchanged, this indicated that the well seal was effective and atmospheric air would not likely enter the SGMW during sampling. If the water level dropped, this indicated that the SGMW may not be effectively sealed and, therefore, would have the potential to be affected by ambient air during sampling (i.e., short-circuit). The water level was inspected at the well location approximately 10 minutes after the initial water level was recorded.

The second stage consisted of using helium gas as a tracer. A shroud was installed over the SGMW and protective casing. The shroud was then filled with helium gas (>75% concentration by volume). Helium was introduced and maintained in the shroud while the SGMW was purged using a lung sampler, air pump, and Tedlar bag at a rate consistent with the rate to be used when collecting the soil gas sample, or at a maximum flow rate of 200 mL/min. The concentration of helium within the Tedlar bag, representing helium infiltration into the SGMW, was then tested using a portable helium detector. If the helium gas concentration measured in the Tedlar bag was greater than 1% of the shroud concentration (i.e., the leak threshold value, presented in Table 1), this indicated that the surface seal of the SGMW may be inadequate and that short-circuiting of atmospheric air into the SGMW during sampling was possible. If helium concentrations were less than the leak threshold value, the SGMW was considered to be adequately sealed for sampling.

Subsequent to leak testing, three casing volumes of air was purged from each well using a GilAir 5 RC sampler pump with a low-flow module.

2.5 SOIL GAS SAMPLING

The soil gas samples were collected from SGMW-1 on June 19, 2012, and January 15, 2013 and from SGMW-2 on October 17, 2013. The soil gas samples were recovered from SGMW-1 and SGMW-2 using a 1.4 L SUMMA® vacuum canister supplied by Maxxam Analytics of Mississauga, Ontario. Immediately prior to sampling, three casing volumes were purged from the SGMW. The initial pressure of the vacuum canister, measured using a vacuum gauge, were -30 inches of mercury (inHg) to -27.5 inHg in SGMW-1 and -28 inHg in SGMW-2. No significant rain fall events were recorded within 24 hours prior to sampling.

The SUMMA® canisters were connected to the top of the well using dedicated laboratory supplied Teflon tubing and control valves (Controllers). The Controller was used to regulate the soil vapour sample flow rate at approximately 23 mL/minute. At the end of the sampling period, the final pressure of the vacuum canister was measured between -6 inHg and -4 inHg in SGMW-1 and -5 inHg in SGMW-2.

2.6 LABORATORY ANALYSES

The soil samples collected from the borehole were submitted for laboratory analyses of BTEX, PHC fractions F1 to F4, hexane, and lead. A total of two soil samples, excluding quality assurance and quality control (QA/QC) samples, were submitted for analysis from SGMW-1.

The soil vapour samples were submitted for laboratory analysis of BTEX and aliphatic and aromatic hydrocarbon fractions.

The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam's Mississauga laboratory is accredited by the Standards Council of Canada. Analytical methods used by the laboratory are referenced in the certificates of analysis presented in Appendix B. Analytical procedures for soil vapour analyses were conducted in accordance with USEPA Method TO-15.

2.7 QUALITY ASSURANCE AND QUALITY CONTROL

A quality assurance and quality control (QA/QC) program was implemented to reduce and quantify potential issues introduced during sample collection, handling, shipping and analysis. The program included, but was not limited to using dedicated sampling equipment, using sample specific identification and labelling procedures, and using chain of custody records.

The laboratory QA/QC analyses are presented in the laboratory certificates of analysis in Appendix B. The analyses included instrument surrogate recoveries, method blanks, matrix duplicates, and laboratory control samples.

Field soil QA/QC samples consisted of one field duplicate sample for analysis of BTEX, PHC fractions F1 to F4, hexane, and lead. In addition, one field blank methanol sample for analysis of BTEX, PHC fraction F1, and hexane was submitted to the laboratory.

Field soil gas QA/QC samples submitted to the laboratory consisted of three field duplicates and three trip blanks for analysis of BTEX and aliphatic and aromatic hydrocarbon fractions.

3.0 FINDINGS

3.1 FIELD OBSERVATIONS

3.1.1 STRATIGRAPHY

The stratigraphic profile encountered in the borehole generally consisted of gravel and sand fill to the maximum depth of assessment of 3.3 mbgs. Detailed stratigraphic descriptions are presented on the borehole logs in Appendix A.

3.1.2 VAPOUR CONCENTRATIONS

Soil vapour concentrations measured in the samples recovered from the boreholes are presented on the logs in Appendix A. The soil vapour concentrations ranged from not detected (<5 ppmv) to 375 ppmv.

3.2 SELECTED CRITERIA

3.2.1 SOIL SITE CONDITION STANDARDS

For the current investigation, the approach to use the amended (2011) Ontario Regulation 153/04 generic site condition standards was selected. The rationale for selection of the applicable standards is described below and based on information in previous reports. In summary, the applicable MOE (2011) Table 3 (non-potable) full depth site condition standards for industrial/commercial/community property use and medium and fine textured soils was selected for comparison with the soil analytical results.

3.2.2 SOIL VAPOUR SCREENING CRITERIA

Soil vapour screening criteria for the SGMWs were determined by using the Tier 2 input worksheet in the Ontario Ministry of the Environment (MOE) *Modified Generic Risk Assessment Spreadsheet* (April 15, 2011), which references the human health based indoor air criteria. MOE default values were selected for the calculations, with the exception of the following: depth to soil vapour measurement, site soil texture, and soil type. The appropriate land use category was

selected for the screening value calculations. The following chart summarizes the Site specific inputs.

Assessment Location	Depth to Soil Vapour Measurement (top of sand pack)[1] (cm)	Land Use	Site Soil Texture[2]	Soil Type (Vadose Zone and Capillary Fringe)[3]
SGMW-1	200	Industrial/commercial/community	Coarse	Sand, Sand
SGMW-2	246	Industrial/commercial/community	Coarse	Sand, Sand

1- Based on the vertical distance from the top of the soil gas well sand pack to the receptor (i.e., the top of the floor slab of the on-site slab on-grade commercial building).
2- Based on the texture of the soil encountered between the soil vapour measurement depth and the receptor.
3- Based on the type of soil encountered in the vadose zone and capillary fringe at each assessment location.

The soil vapour screening criterion for the SGMWs are presented in Tables 3 to 5.

3.3 SOIL ANALYTICAL RESULTS

The soil analytical results for BTEX, PHC fractions F1 to F4, hexane, and lead are presented and compared to the applicable MOE Table 3 standards in Table 2 and shown on Drawing No. 3. As indicated, all of the results satisfied the applicable standards with the exception of benzene.

3.4 SOIL GAS MONITORING WELL LEAK TESTING RESULTS

A comparison of the initial and final water levels during the water leak test indicated that the water levels did not change; therefore, the results of the water leak test were considered satisfactory.

The SGMW helium leak testing results are presented in Table 1. As indicated, the concentration of helium detected in the SGMWs was 0.0% by volume, which was less than the respective leak threshold values; therefore, the results of the helium gas leak test were considered satisfactory.

3.5 SOIL GAS ANALYTICAL RESULTS

The soil vapour analytical results and the calculated screening criteria are presented in Tables 3 to 5 and shown on Drawing No. 4. As indicated, all of the results were below the calculated screening criterion on June 19, 2012 and January 15 and October 17, 2013 with the exception of benzene in each well.

The laboratory certificates of analysis are presented in Appendix B.

3.6 QUALITY ASSURANCE / QUALITY CONTROL RESULTS

The results of the laboratory QA/QC analyses are presented in the laboratory certificates of analysis in Appendix B. The analyses included instrument and extraction surrogate recoveries, method blanks, matrix duplicates and laboratory control samples No laboratory QA/QC issues were identified that call into question the reliability of the laboratory data reported.

The results of the field QA/QC sample analysis are presented in the tables in Appendix C. The samples included one soil duplicate, one field blank, three soil vapour duplicates and three trip blank samples. No field QA/QC issues were identified that call into question the reliability of the laboratory data reported.

The laboratory and field QA/QC discussions are presented in Appendix C. In summary, no QA/QC issues were identified that would affect the overall conclusions for the assessment presented in this report.

4.0 SUMMARY AND CONCLUSIONS

During the assessment, two boreholes were advanced and a SGMW was installed in each. Soil samples were submitted for laboratory analysis of BTEX, PHC fractions F1 to F4, hexane and lead from SGMW-1. Soil gas samples were collected and submitted for laboratory analysis of BTEX and aliphatic and aromatic hydrocarbon fractions from both SGMW's

The results of the assessment are summarized as follows:

1. The stratigraphic profile encountered in the boreholes generally consisted of gravel and sand fill to the maximum assessment depth of 3.30 mbgs.

2. The MOE (2011) Table 3 (non-potable) site condition standards for medium and fine textured soils and industrial/commercial/community property use were selected for comparison with the soil analytical results.

3. All soil sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, hexane and lead with the exception of benzene.

4. The results of the SGMW water and helium leak tests were satisfactory.

5. The Tier 2 input worksheet in the MOE Modified Generic Risk Assessment Spreadsheet (April 15, 2011), which references the human health based indoor air criteria was used to calculate the vapour screening criteria.

6. All of the soil vapour analytical results satisfied the calculated screening criteria for TEX and aliphatic and aromatic hydrocarbon fractions with the exception of benzene.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc. for Imperial Oil. It is intended for the sole and exclusive use of Imperial Oil, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and O'Connor Associates make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates. Nothing in this report is intended to constitute or provide a legal opinion.

We trust the foregoing information is satisfactory for your requirements.

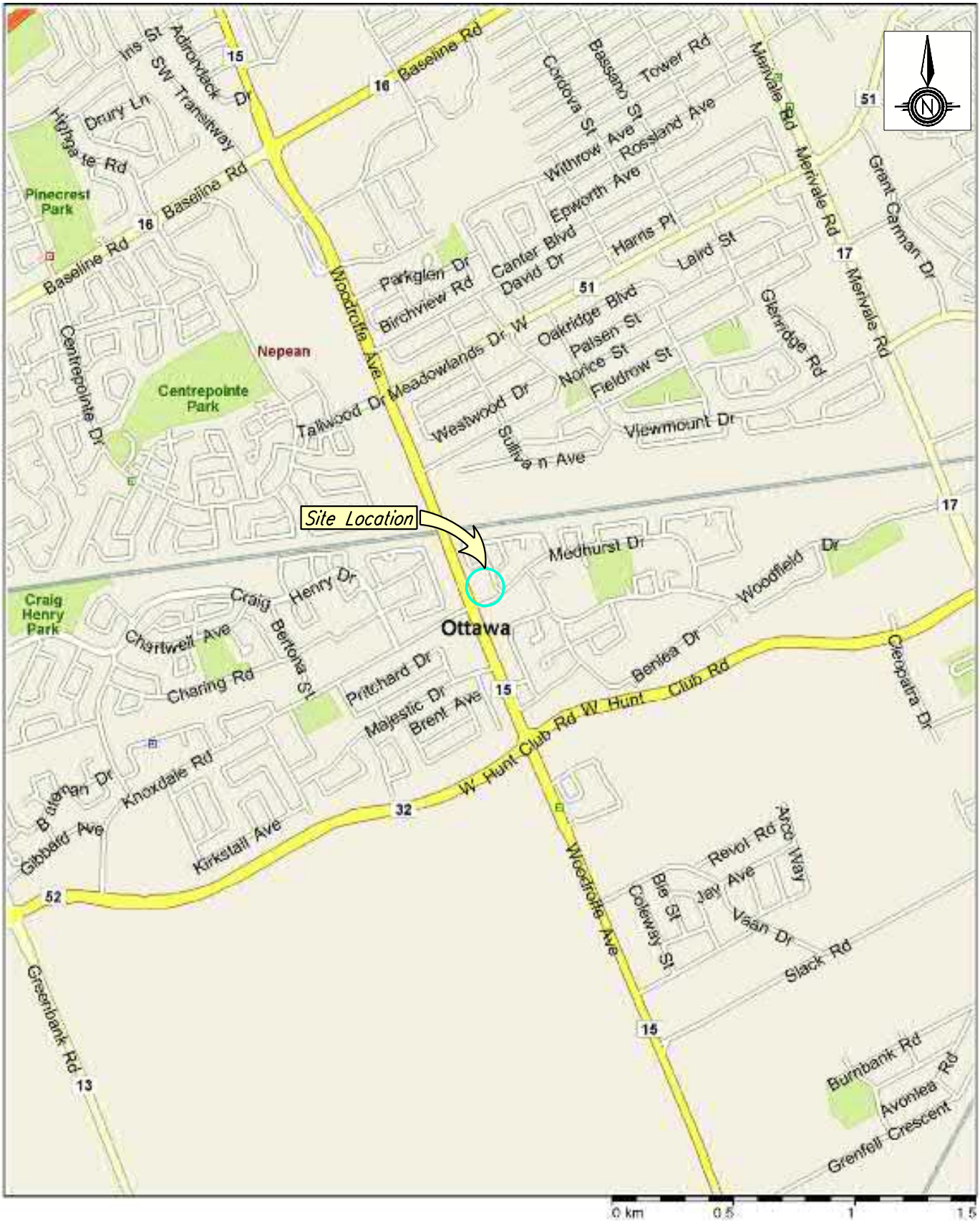
O'CONNOR ASSOCIATES ENVIRONMENTAL INC., A PARSONS COMPANY

Holly Losignore, B.Sc.

David Kantor, P.Eng.

HNL:elh

W:\8000-999\8518#00\8518#02\8518T0214.R01(P2)f.docx

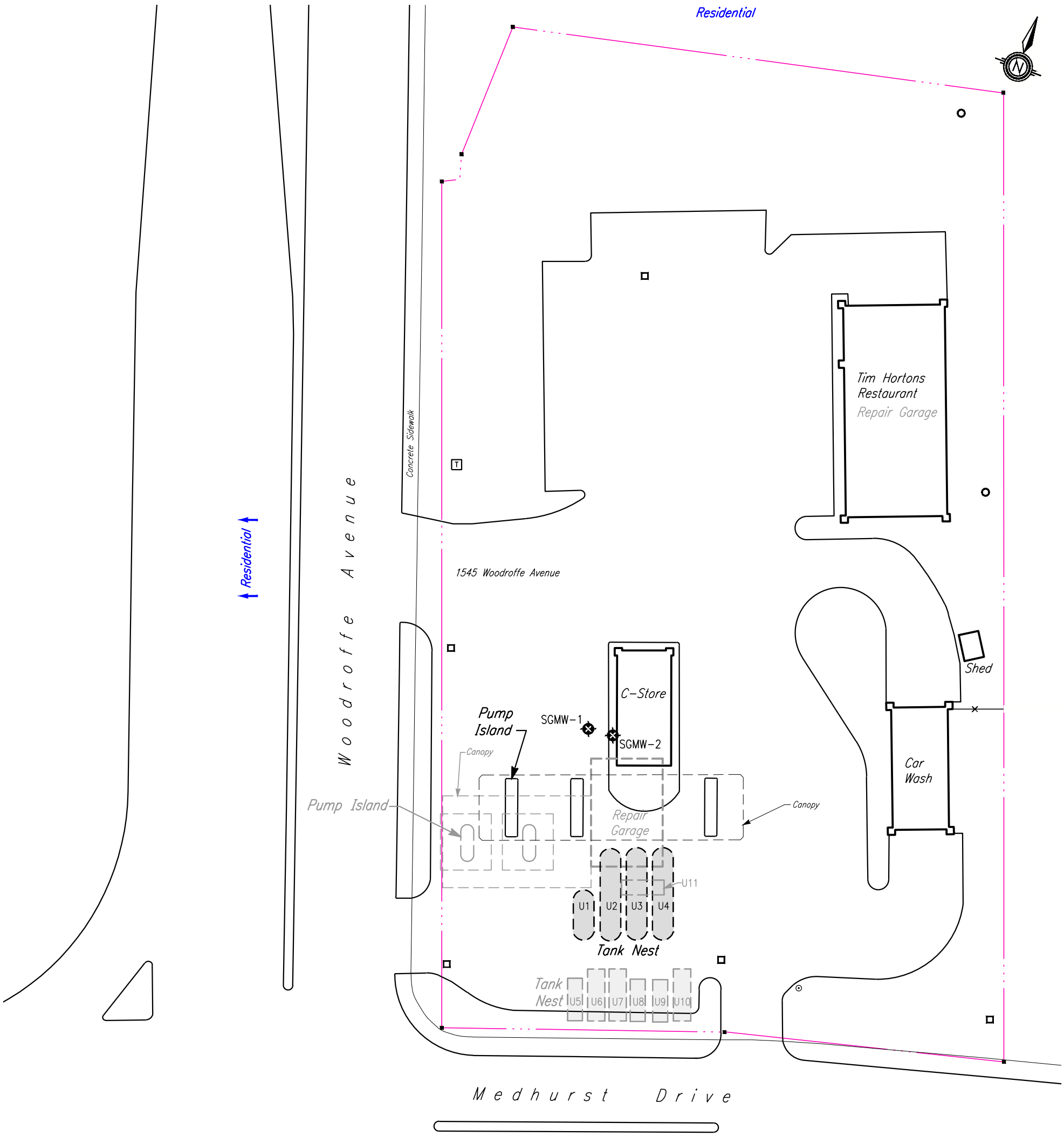


REFERENCE: Microsoft Streets and Trips, 2009.

Site Location Map

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLM	Page Size: 8.5 x 11 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518T120	Date: 2013/11/01
PARSONS		Drawing No.: 1



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Transformer (Pad Mounted)
- Soil Gas Monitoring Well
  SGMW-1 by Parsons, 2012
  SGMW-2 by Parsons, 2013
- 2010/12/31 Date Format: yyyy/mm/dd

Utilities

- Catch Basin
- Manhole
- Utility Pole

Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U5	UST	13 600 L	Gasoline	Removed
U6	UST	22 700 L	Gasoline	Removed
U7	UST	22 700 L	Gasoline	Removed
U8	UST	13 600 L	Diesel	Removed
U9	UST	13 600 L	Gasoline	Removed
U10	UST	22 700 L	Gasoline	Removed
U11	UST	2 273 L	Furnace Oil	Removed

0 5 10 15 20 25m

Scale 1:500

NOTE: All features are approximate.

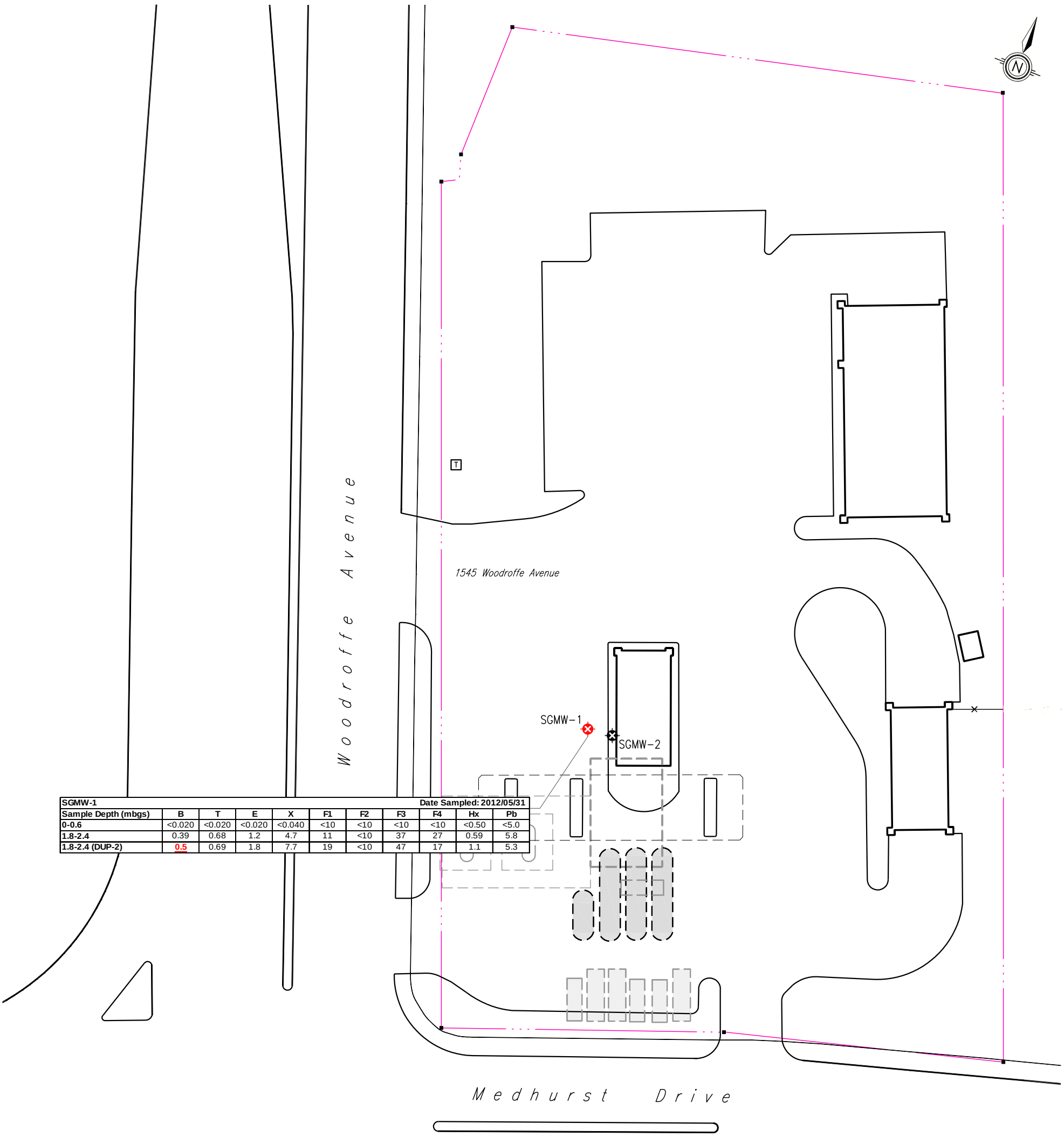
REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

Site Plan

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLM	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518S121	Date: 2013/12/02
PARSONS		Drawing No.: 2

Ref.: S-34-P



SGMW-1										Date Sampled: 2012/05/31
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
0-0.6	<0.020	<0.020	<0.020	<0.040	<10	<10	<10	<10	<0.50	<5.0
1.8-2.4	0.39	0.68	1.2	4.7	11	<10	37	27	0.59	5.8
1.8-2.4 (DUP-2)	**0.5**	0.69	1.8	7.7	19	<10	47	17	1.1	5.3

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Soil Gas Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/g — Micrograms Per Gram, dry weight basis

Analytical Results

All Results Reported in µg/g

- Location Where All Soil Samples Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where At Least One Soil Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- **1234** — Exceedances of Standards, Shown in Red and Bold
- DUP — Field Duplicate Sample
- < — Result Less Than Reportable Detection Limit

Standards

Parameters	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/g	0.4	78	19	30	65	250	2500	6600	88	120

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1**-**F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOE Table 3 (2011)** Industrial/commercial/community, fine and medium textured soils

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

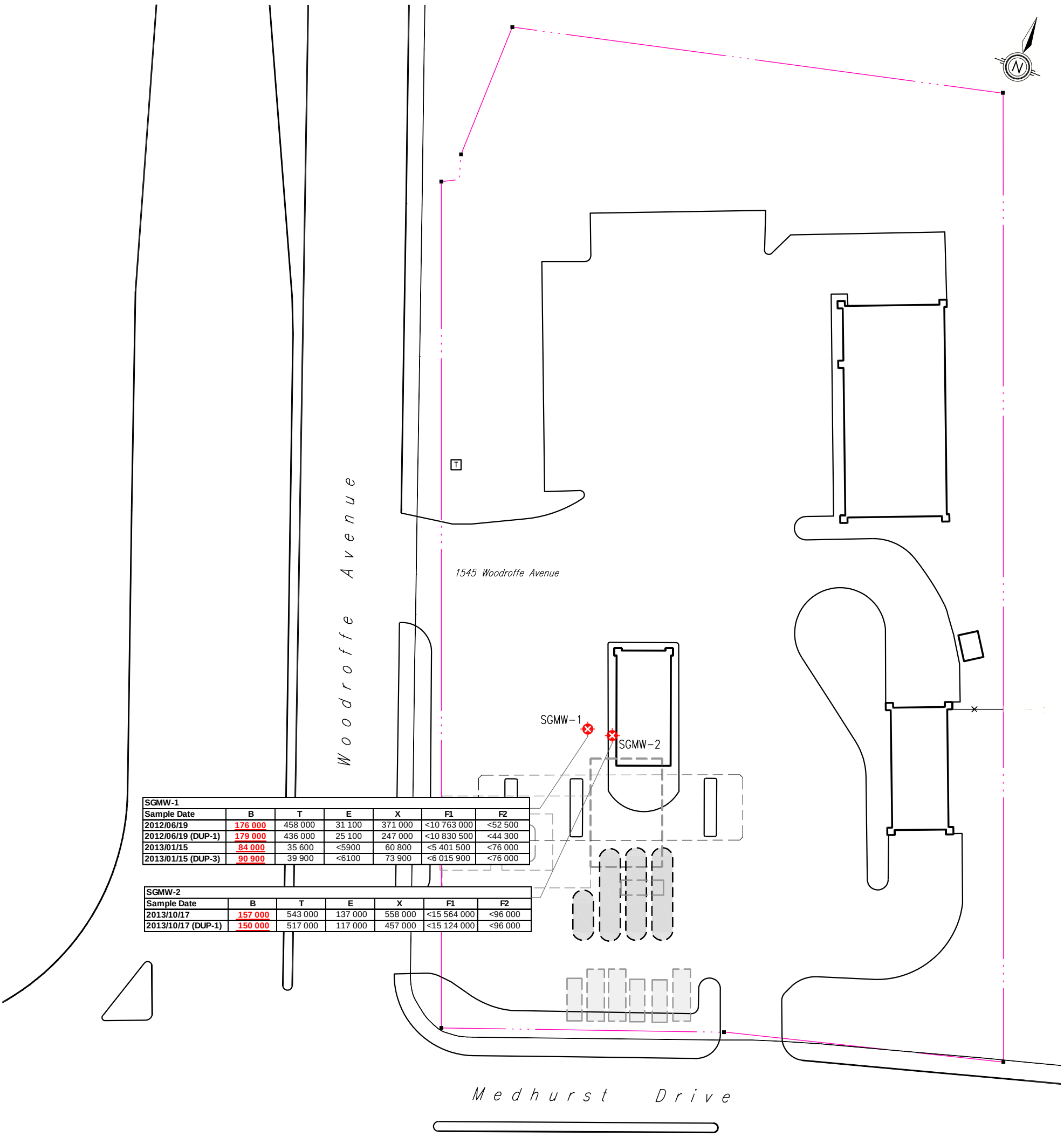
Scale 1:500

Ref.: S-34-P

Soil Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: TFY	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518B129	Date: 2013/11/08
PARSONS		Drawing No.: 3



SGMW-1						
Sample Date	B	T	E	X	F1	F2
2012/06/19	176 000	458 000	31 100	371 000	<10 763 000	<52 500
2012/06/19 (DUP-1)	179 000	436 000	25 100	247 000	<10 830 500	<44 300
2013/01/15	84 000	35 600	<5900	60 800	<5 401 500	<76 000
2013/01/15 (DUP-3)	90 900	39 900	<6100	73 900	<6 015 900	<76 000

SGMW-2						
Sample Date	B	T	E	X	F1	F2
2013/10/17	157 000	543 000	137 000	558 000	<15 564 000	<96 000
2013/10/17 (DUP-1)	150 000	517 000	117 000	457 000	<15 124 000	<96 000

Analytical Results

All Results Reported in µg/m³

Location Where Most Recent Soil Vapour Analytical Results Met the Calculated Soil Vapour Screening Criteria, Shown in Green

Location Where the Most Recent Soil Vapour Analytical Results Exceeded the Calculated Soil Vapour Screening Criteria for At Least One Parameter that Was Analyzed, Shown in Red

Location Where No Soil Gas Sample Was Submitted for Analysis, Shown in Black

1234 Exceedances of Criteria, Shown in Red and Bold

DUP Field Duplicate Sample

– Not Analyzed

< Result Less Than Reportable Detection Limit

LEGEND

Former Feature

Property Line, Surveyed 2006

Property Boundary Pin

Fence

T Transformer (Pad Mounted)

Soil Gas Monitoring Well

2010/12/31 Date Format: yyyy/mm/dd

mmbgs Millimetres Below Ground Surface

µg/m³ Micrograms Per Cubic Metre

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Scale 1:500

Criteria

Parameter	B	T	E	X	F1	F2
SGMW-1 Criteria[a] µg/m³	4.26E+04	2.26E+07	5.64E+06	1.44E+07	2.72E+07	2.09E+07
SGMW-2 Criteria[a] µg/m3	4.61E+04	2.26E+07	6.14E+06	1.57E+07	2.72E+07	2.09E+07

B-Benzene **T**-Tolulene **E**-Ethylbenzene **X**-Total Xylenes **F1**-Sum of aliphatic and aromatic fractions >C5-C10 **F2**-Sum of aliphatic and aromatic fractions >C10-C16

a - Calculated soil vapour screening criteria for industrial/commercial/community property use, Ontario Ministry of the Environment Modified Generic Risk Assessment Spreadsheet (April 15, 2011).

Soil Vapour Analytical Results
Petroleum Hydrocarbon Parameters

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: TFY	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518Y130	Date: 2013/11/08
PARSONS		Drawing No.: 4

Ref.: S-34-P

TABLE 1

HELIUM LEAK TEST DATA

Location	Date (yyyy/mm/dd)	Helium Flow Rate into Shroud (mL/min)	Sample Flow Rate (mL/min)	Helium in Shroud (%)		Testing Time (min)	Helium Concentration in well (%)	Leak Threshold Value[a] (%)	Results (Pass if < Leak Threshold Value)
				Before	After				
SGMW-1	2012/06/13	500	200	85	88	5	0	0.85	Pass
SGMW-2	2013/10/17	550	200	82	79	15	0	0.79	Pass

a - 1% of the lowest helium concentration measured in the shroud
mL/min - millilitre per minute

TABLE 2

SOIL ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	SGMW-1-0-0.6	SGMW-1-1.8-2.4	DUP-2 FIELD DUPLICATE SGMW-1-1.8-2.4	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B280936	B280936	B280936	
Maxxam Sample ID	NR1902	NR1903	NR1904	
Sample Depth (mbgs)	0-0.6	1.8-2.4	1.8-2.4	
Date Sampled (yyyy/mm/dd)	2012/05/31	2012/05/31	2012/05/31	
PARAMETERS				
Benzene	<0.020	0.39	**0.50**	0.4
Toluene	<0.020	0.68	0.69	78
Ethylbenzene	<0.020	1.2	1.8	19
Total Xylenes	<0.040	4.7	7.7	30
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	11	19	65
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	<10	250
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	37	47	2500
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	27	17	6600
Hexane	<0.50	0.59	1.1	88
Lead	<5.0	5.8	5.3	120

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
"-" - Not analyzed
* - Result from F4 gravimetric analysis
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 3

SOIL VAPOUR ANALYTICAL RESULTS - JUNE 19, 2012 SAMPLING EVENT - PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	SGMW-1	DUP-1 FIELD DUPLICATE SGMW-1	
Vapour Screen Interval Depth (mbgs)	2.25-2.43	2.25-2.43	Soil Vapour Screening Criteria[1]
Maxxam Certificate of Analysis No.	B291074	B291074	
Maxxam Sample ID	NW0132	NW0133	
Date Sampled (yyyy/mm/dd)	2012/06/19	2012/06/19	
PARAMETERS			
Benzene	176 000	179 000	4.26E+04
Toluene	458 000	436 000	2.26E+07
Ethylbenzene	31 100	25 100	5.64E+06
Total Xylenes	371 000	247 000	1.44E+07
PHC F1			
Aliphatic >C5-C6	3 190 000	3 370 000	NC
Aliphatic >C6-C8	7 150 000	7 260 000	NC
Aliphatic >C8-C10	255 000	180 000	NC
Aromatic >C7-C8*	<9000	<9000	NC
Aromatic >C8-C10	159 000	11 500	NC
Total PHC F1	<10 763 000	<10 830 500	2.72E+07
PHC F2			
Aliphatic >C10-C12	<9000	<9000	NC
Aliphatic >C12-C16	<9000	<9000	NC
Aromatic >C10-C12	25 500	17 300	NC
Aromatic >C12-C16	<9000	<9000	NC
Total PHC F2	<52 500	<44 300	2.09E+07

1 - Calculated soil vapour screening criteria for industrial/commercial/community property use, Ontario Ministry of the Environment Modified Generic Risk Assessment Spreadsheet (April 15, 2011).

* - Toluene, ethylbenzene, and xylenes excluded

NC - Not calculated

BOLD - Exceeds soil vapour screening criteria

Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 4

SOIL VAPOUR ANALYTICAL RESULTS - JANUARY 15, 2013 SAMPLING EVENT - PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	SGMW-1	DUP-3 FIELD DUPLICATE SGMW-1	
Vapour Screen Interval Depth (mbgs)	2.25-2.43	2.25-2.43	Soil Vapour Screening Criteria[1]
Maxxam Certificate of Analysis No.	B307057	B307057	
Maxxam Sample ID	QC2305	QC2306	
Date Sampled (yyyy/mm/dd)	2013/01/15	2013/01/15	
PARAMETERS			
Benzene	**84 000**	**90 900**	4.26E+04
Toluene	35 600	39 900	2.26E+07
Ethylbenzene	<5900	<6100	5.64E+06
Total Xylenes	60 800	73 900	1.44E+07
PHC F1			
Aliphatic >C5-C6	2 350 000	2 620 000	NC
Aliphatic >C6-C8	2 950 000	3 270 000	NC
Aliphatic >C8-C10	52 900	72 000	NC
Aromatic >C7-C8*	<19 000	<19 000	NC
Aromatic >C8-C10	29 600	34 900	NC
Total PHC F1	<5 401 500	<6 015 900	2.72E+07
PHC F2			
Aliphatic >C10-C12	<19 000	<19000	NC
Aliphatic >C12-C16	<19 000	<19000	NC
Aromatic >C10-C12	<19 000	<19000	NC
Aromatic >C12-C16	<19 000	<19000	NC
Total PHC F2	<76 000	<76 000	2.09E+07

1 - Calculated soil vapour screening criteria for industrial/commercial/community property use, Ontario Ministry of the Environment Modified Generic Risk Assessment Spreadsheet (April 15, 2011).

* - Toluene, ethylbenzene, and xylenes excluded

NC - Not calculated

BOLD - Exceeds soil vapour screening criteria

Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 5

SOIL VAPOUR ANALYTICAL RESULTS - OCTOBER 17, 2013 SAMPLING EVENT - PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	SGMW-2	DUP-1 FIELD DUPLICATE SGMW-2	
Vapour Screen Interval Depth (mbgs)	2.62-2.67	2.62-2.67	Soil Vapour Screening Criteria[1]
Maxxam Certificate of Analysis No.	B3H8358	B3H8358	
Maxxam Sample ID	TN4959	TN4958	
Date Sampled (yyyy/mm/dd)	2013/10/17	2013/10/17	
PARAMETERS			
Benzene	157 000	150 000	4.61E+04
Toluene	543 000	517 000	2.26E+07
Ethylbenzene	137 000	117 000	6.14E+06
Total Xylenes	558 000	457 000	1.57E+07
PHC F1			
Aliphatic >C5-C6	4 110 000	3 980 000	NC
Aliphatic >C6-C8	10 700 000	10 500 000	NC
Aliphatic >C8-C10	591 000	503 000	NC
Aromatic >C7-C8*	<24 000	<24 000	NC
Aromatic >C8-C10	139 000	117 000	NC
Total PHC F1	<15 564 000	<15 124 000	2.72E+07
PHC F2			
Aliphatic >C10-C12	<24 000	<24 000	NC
Aliphatic >C12-C16	<24 000	<24 000	NC
Aromatic >C10-C12	<24 000	<24 000	NC
Aromatic >C12-C16	<24 000	<24 000	NC
Total PHC F2	<96 000	<96 000	2.09E+07

1 - Calculated soil vapour screening criteria for industrial/commercial/community property use, Ontario Ministry of the Environment Modified Generic Risk Assessment Spreadsheet (April 15, 2011).

* - Toluene, ethylbenzene, and xylenes excluded

NC - Not calculated

BOLD - Exceeds soil vapour screening criteria

Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

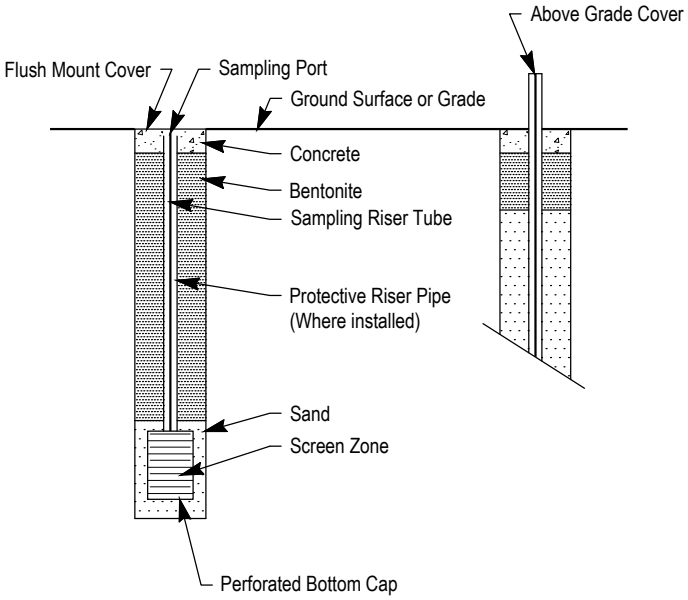
APPENDIX A

BOREHOLE LOGS

BOREHOLE LOG LEGEND

Soil Gas Monitoring Well

Soil Gas Monitoring Well (SGMW) Details[a]



Backfill Legend

- Asphalt
- Concrete
- Bentonite
- Gravel
- Sand[b]
- Slough
- Drill Cuttings
- Grout

Notes

a A generalized representation to show the well construction depicted on logs. Refer to log for specific well construction and backfill details.

b #2 well pack silica sand

Sample Type

DC	Drill Cutting
G	Grab
SL	Sleeved Tube
SS	Split Spoon
ST	Shelby Tube
OS	Other

Grab Samples are obtained by a stainless steel spoon, side wall sampler, hand auger or other sampling tool.

'N' Value is determined from a Standard Penetration Test. R represents a blow count of 50 or greater for a drive distance of 150 mm or less.

Stratigraphy Legend

- Asphalt
- Boulders
- Cobbles
- Gravel
- Sand
- Silt
- Clay
- Topsoil
- Concrete
- Sandy Gravel
- Gravelly Sand
- Sandy Silt
- Sandy Clay
- Peat
- Other Constructed Layer
- Sand and Gravel
- Silty Sand
- Clayey Silt
- Silty Clay
- Organic Soil

BOREHOLE LOG - Soil Gas Monitoring Well

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518T02	BOREHOLE NO: **SGMW-1**
CLIENT: Imperial Oil		START DATE: 2012/05/31
		COMPLETION DATE: 2012/05/31
		PAGE 1 of 1

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES	SOIL GAS WELL	Depth (ft)
0	GROUND SURFACE										0
	ASPHALT.										
	GRAVEL (Fill) - gray, silty, some sand, damp.		G	-	-		SGMW-1-0.0-0.6 / BTEX, PHC F1-F4, Hexane, Lead	▲			
	- olive gray, sandy, some silt.										
1	SAND (Fill) - olive brown, medium to fine grained, gravelly, trace boulders, trace cobbles, trace silt, damp.		G	-	-			▲			
			G	-	-			▲			5
2	SILT - olive, clayey, some gravel, trace boulders, trace cobbles, trace sand, moist.		G	-	-		SGMW-1-1.8-2.4 (Dup-2) / BTEX, PHC F1-F4, Hexane, Lead	▲			
	SAND - gray, fine grained, silty, some gravel, trace clay, moist, petroleum odour.								Soil Gas Monitoring Well Installed to 2.43 m, 102 mm Dia. PVC Pipe, 10 Slot, Screened from 2.25 m to 2.43 m with a Solid 6.35 mm Dia. Nylon Riser in a 25.4 mm Dia. Protective PVC Riser. SGMW Volume: 1610 mL		
	END OF BOREHOLE at 2.51 m										
	Borehole Daylighted to 2.51 m										10
3											
4											15
5											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: GasTech 1238ME
2012/05/31	0.0 m	406 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: NLH / DRAFTED: EFO

PARSONS

8518T02 SGMW 2013.GPJ PARSONS PE&I-CEG REPORT LOG 51 PE&I-CEG DATA V2.GDT PE&I-CEG LIBRARY V2-01.GLB PREPARED: re-created 2013 (on new template) PRINTED: 2/12/2013

BOREHOLE LOG - Soil Gas Monitoring Well

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518T02	BOREHOLE NO: **SGMW-2**
CLIENT: Imperial Oil		START DATE: 2013/10/15
		COMPLETION DATE: 2013/10/15
		PAGE 1 of 1

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES	SOIL GAS WELL	Depth (ft)
0	GROUND SURFACE										0
	CONCRETE.										
	SAND (Fill) - olive brown, gravelly, damp.		G	-	-			▲			
1	- medium to fine grained below 1.1 m.		G	-	-			▲			5
			G	-	-			▲			
2			G	-	-						
3	SAND - olive gray, fine grained, silty, some gravel, damp. petroleum hydrocarbon odour below 3.3 m.										10
	END OF BOREHOLE at 3.30 m										
	Borehole Daylighted to 3.30 m										
4											15
5									Soil Gas Monitoring Well Installed to 2.67 m, 12.7 mm Dia. PVC Pipe, 10 Slot, Screened from 2.62 m to 2.67 m with a Solid 6.35 mm Dia. Nylon Riser, 2.63 m in length. SGMW Volume: 108 mL		

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2013/10/15	0.0 m	305 mm	Concrete Corer	Capital Coring	LOGGED: TEM / REVIEW: HNL / DRAFTED: MLM
2013/10/15	0.1 m	305 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	

PARSONS

8518T02 SGMW 2013.GPJ PARSONS PE&I-CEG REPORT LOG 51 PE&I-CEG DATA V2.GDT PE&I-CEG LIBRARY V2-01.GLB PREPARED: 2013 PRINTED: 2/12/2013

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS – SOIL AND SOIL VAPOUR

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 74617

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280936
Received: 2012/06/02, 09:30

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	3	CAM SOP-00408	SW-846 6010C
Moisture	3	CAM SOP-00445	R.Carter,1993

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 74617

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280936
Received: 2012/06/02, 09:30

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

Encryption Key

Patricia Opoku
08 Jun 2012 16:11:36 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B280936
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

LEAD IN SOIL (SOIL)

Maxxam ID		NR1902	NR1903	NR1904		
Sampling Date		2012/05/31 14:00	2012/05/31 14:30	2012/05/31 14:30		
COC Number		74617	74617	74617		
	Units	**SGMW-1-0-0.6**	**SGMW-1-1.8-2.4**	**DUP-2**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5.0	5.8	5.3	5.0	2871061

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280936
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN SOIL (SOIL)

Maxxam ID		NR1902	NR1903	NR1904		
Sampling Date		2012/05/31 14:00	2012/05/31 14:30	2012/05/31 14:30		
COC Number		74617	74617	74617		
	Units	**SGMW-1-0-0.6**	**SGMW-1-1.8-2.4**	**DUP-2**	**RDL**	**QC Batch**
Moisture	%	9.4	22	25	1.0	2870619
Benzene	ug/g	<0.020	0.39	0.50	0.020	2873390
Toluene	ug/g	<0.020	0.68	0.69	0.020	2873390
Ethylbenzene	ug/g	<0.020	1.2	1.8	0.020	2873390
o-Xylene	ug/g	<0.020	1.1	1.8	0.020	2873390
p+m-Xylene	ug/g	<0.040	3.5	5.8	0.040	2873390
Total Xylenes	ug/g	<0.040	4.7	7.7	0.040	2873390
Hexane	ug/g	<0.50	0.59	1.1	0.50	2873390
F1 (C6-C10)	ug/g	<10	18	30	10	2873390
F1 (C6-C10) - BTEX	ug/g	<10	11	19	10	2873390
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	2871932
F3 (C16-C34 Hydrocarbons)	ug/g	<10	37	47	10	2871932
F4 (C34-C50 Hydrocarbons)	ug/g	<10	27	17	10	2871932
Reached Baseline at C50	ug/g	Yes	Yes	Yes		2871932
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	85	87	89		2873390
o-Terphenyl	%	98	100	98		2871932
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	109	108	109		2873390
4-Bromofluorobenzene	%	107	106	120		2873390
D4-1,2-Dichloroethane	%	105	102	105		2873390

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280936
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NR1902 **Collected** 2012/05/31
Sample ID SGMW-1-0-0.6 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/08	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam ID NR1903 **Collected** 2012/05/31
Sample ID SGMW-1-1.8-2.4 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/08	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam ID NR1904 **Collected** 2012/05/31
Sample ID DUP-2 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/08	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280936
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B280936

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2871061	SUK	Method Blank	Acid Extractable Lead (Pb)	2012/06/05	<5.0		ug/g	
2871932	DPO	Method Blank	o-Terphenyl	2012/06/07		102	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/07	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2012/06/07	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2012/06/07	<10		ug/g	
2873390	ABD	Method Blank	1,4-Difluorobenzene	2012/06/07		106	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		105	%	60 - 140
			D10-Ethylbenzene	2012/06/07		86	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		103	%	60 - 140
			Benzene	2012/06/07	<0.020		ug/g	
			Toluene	2012/06/07	<0.020		ug/g	
			Ethylbenzene	2012/06/07	<0.020		ug/g	
			o-Xylene	2012/06/07	<0.020		ug/g	
			p+m-Xylene	2012/06/07	<0.040		ug/g	
			Total Xylenes	2012/06/07	<0.040		ug/g	
			Hexane	2012/06/07	<0.50		ug/g	
			F1 (C6-C10)	2012/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2012/06/07	<10		ug/g	
2871061	SUK	LCS	Acid Extractable Lead (Pb)	2012/06/05		107	%	80 - 120
2871932	DPO	LCS	o-Terphenyl	2012/06/07		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/07		91	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/07		97	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/07		98	%	70 - 130
2873390	ABD	LCS	1,4-Difluorobenzene	2012/06/07		107	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		107	%	60 - 140
			D10-Ethylbenzene	2012/06/07		96	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		102	%	60 - 140
			Benzene	2012/06/07		108	%	60 - 140
			Toluene	2012/06/07		97	%	60 - 140
			Ethylbenzene	2012/06/07		116	%	60 - 140
			o-Xylene	2012/06/07		99	%	60 - 140
			p+m-Xylene	2012/06/07		104	%	60 - 140
			Hexane	2012/06/07		83	%	60 - 140
			F1 (C6-C10)	2012/06/07		89	%	60 - 140

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B280936

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

CRISTINA CARRIERE, Scientific Services

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 74617

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7886	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491-01003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (Hexane)	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	Poor sample recovery + insufficient # of bottles Proceed with analysis as is.
1	SGMW-1-0-0.6			X		4	12/05/31	14:00			X	X	X					X										X	X
2	SGMW-1-1.8-2.4			X		4	12/05/31	14:30			X	X	X					X										X	X
3	~~DUP-1~~ DUP-2			X		4	12/05/31	14:30			X	X	X					X										X	X
4																													
5																													
6																													
7																													
8																													
9																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 38001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1107092 7

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO 1/c/c med/fine grained ☐ ODWS
☐ Other

SPECIAL INSTRUCTIONS
Test samples as per TDG
Due to nature of samples headspace may be present
Proceed with analysis as is.
ICE - YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
1	PRESENT	✓			PRESENT				PRESENT		
TEMP 3/2/1°C	INTACT	✓		TEMP	INTACT			TEMP	INTACT		
1 2 3				1 2 3				1 2 3			

LAB USE ONLY
MAXXAM JOB # B280936

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2012/05/01	12:00	1. DAVID CHAN	2012/06/02	09:30
2.			2.		
3.			3.		

SAMPLES
LABELED BY: DKN
VERIFIED BY:

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates, A Parsons Company* Sampling Date: 2012/05/31

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B280936*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Nicole Hottot* Data Reviewed by (Signature): N. Hottot

Review Date: *2012/06/15*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69374

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280942
Received: 2012/06/02, 09:30

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69374

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280942
Received: 2012/06/02, 09:30

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

Encryption Key

Kudrat Cheema

08 Jun 2012 15:20:25 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		NR1915		
Sampling Date		2012/05/31 17:00		
COC Number		69374		
	Units	**FIELD BLANK-1**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	0.020	2873390
Toluene	ug/g	<0.020	0.020	2873390
Ethylbenzene	ug/g	<0.020	0.020	2873390
o-Xylene	ug/g	<0.020	0.020	2873390
p+m-Xylene	ug/g	<0.040	0.040	2873390
Total Xylenes	ug/g	<0.040	0.040	2873390
Hexane	ug/g	<0.50	0.50	2873390
F1 (C6-C10)	ug/g	<10	10	2873390
F1 (C6-C10) - BTEX	ug/g	<10	10	2873390
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	88		2873390
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	105		2873390
4-Bromofluorobenzene	%	104		2873390
D4-1,2-Dichloroethane	%	104		2873390

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NR1915
Sample ID FIELD BLANK-1
Matrix Soil

Collected 2012/05/31
Shipped 2012/06/01
Received 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/08	ABDI MOHAMUD

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B280942

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2873390	ABD	Method Blank	1,4-Difluorobenzene	2012/06/07		106	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		105	%	60 - 140
			D10-Ethylbenzene	2012/06/07		86	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		103	%	60 - 140
			Benzene	2012/06/07	<0.020		ug/g	
			Toluene	2012/06/07	<0.020		ug/g	
			Ethylbenzene	2012/06/07	<0.020		ug/g	
			o-Xylene	2012/06/07	<0.020		ug/g	
			p+m-Xylene	2012/06/07	<0.040		ug/g	
			Total Xylenes	2012/06/07	<0.040		ug/g	
			Hexane	2012/06/07	<0.50		ug/g	
			F1 (C6-C10)	2012/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2012/06/07	<10		ug/g	
		LCS	1,4-Difluorobenzene	2012/06/07		107	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		107	%	60 - 140
			D10-Ethylbenzene	2012/06/07		96	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		102	%	60 - 140
			Benzene	2012/06/07		108	%	60 - 140
			Toluene	2012/06/07		97	%	60 - 140
			Ethylbenzene	2012/06/07		116	%	60 - 140
			o-Xylene	2012/06/07		99	%	60 - 140
			p+m-Xylene	2012/06/07		104	%	60 - 140
			Hexane	2012/06/07		83	%	60 - 140
			F1 (C6-C10)	2012/06/07		89	%	60 - 140

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B280942

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

Suzana Popovic

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD

C of C # 69374

ANALYSIS REQUESTED

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: Nancy Hazell - oconnor Associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (hexane)	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1 FIELD BLANK-1				X	2	12/05/31	17:00			X	X																
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 88001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1107092 7

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
(please indicate which Reg. version and if RSC required)
1/c/c medium/fine grained
[ ] PWQO [ ] ODWS
[ ] Other _____

SPECIAL INSTRUCTIONS: Test samples as per TDG
ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) [X]
~~Rush~~ (3 days) [ ]
(2 days) [ ]
(1 day) [ ]
(same day) [ ]
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 3/2/1°C (1 2 3)	PRESENT	✓		TEMP (1 2 3)	PRESENT			TEMP (1 2 3)	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2012/05/01	12:00	1. DAVID CHAN	2012/06/02	09:30
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB # B280942
SAMPLES
LABELED BY: DKN
VERIFIED BY: MAF

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates, A Parsons Company* Sampling Date: 2012/05/31

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B280942*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Nicole Hottot* Data Reviewed by (Signature): N. Hottot

Review Date: *2012/06/15*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 65710

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B291074
Received: 2012/06/20, 07:45

Sample Matrix: AIR
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
BTEX Fractionation in Air (TO-15mod)	3	BRL SOP-00304	EPA TO-15mod
Canister Pressure (TO-15)	3	BRL SOP-00304	EPA TO-15

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 65710

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B291074
Received: 2012/06/20, 07:45

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

Encryption Key

Kudrat Cheema

29 Jun 2012 16:46:27 -04:00

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

Kudrat Cheema, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B291074
Report Date: 2012/06/29

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

RESULTS OF ANALYSES OF AIR

Maxxam ID		NW0132	NW0133		NW0134	
Sampling Date		2012/06/19 11:45	2012/06/19 11:45		2012/06/19 12:45	
COC Number		65710	65710		65710	
	Units	**SGMW-1**	**DUP-1**	**QC Batch**	**TRIP BLANK-1**	**QC Batch**
Pressure on Receipt	psig	(-1.3)	(-1.4)	2891349	(-14.3)	2893916

QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B291074
Report Date: 2012/06/29

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		NW0132	NW0132	NW0133		
Sampling Date		2012/06/19 11:45	2012/06/19 11:45	2012/06/19 11:45		
COC Number		65710	65710	65710		
	Units	**SGMW-1**	**SGMW-1 Lab-Dup**	**DUP-1**	**RDL**	**QC Batch**
Benzene	ug/m3	176000	173000	179000	2000	2891441
Toluene	ug/m3	458000	447000	436000	3000	2891441
Ethylbenzene	ug/m3	31100	30100	25100	3000	2891441
Total Xylenes	ug/m3	371000	356000	247000	4000	2891441
Aliphatic >C5-C6	ug/m3	3190000	3180000	3370000	20000	2891441
Aliphatic >C6-C8	ug/m3	7150000	7090000	7260000	20000	2891441
Aliphatic >C8-C10	ug/m3	255000	252000	180000	9000	2891441
Aliphatic >C10-C12	ug/m3	<9000	<9000	<9000	9000	2891441
Aliphatic >C12-C16	ug/m3	<9000	<9000	<9000	9000	2891441
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<9000	<9000	<9000	9000	2891441
Aromatic >C8-C10	ug/m3	159000	155000	11500	9000	2891441
Aromatic >C10-C12	ug/m3	25500	26300	17300	9000	2891441
Aromatic >C12-C16	ug/m3	<9000	<9000	<9000	9000	2891441
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	84	86	87		2891441
Bromochloromethane	%	81	84	83		2891441
D5-Chlorobenzene	%	78	81	81		2891441

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B291074
Report Date: 2012/06/29

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		NW0134		
Sampling Date		2012/06/19 12:45		
COC Number		65710		
	Units	**TRIP BLANK-1**	**RDL**	**QC Batch**
Benzene	ug/m3	<1	1	2894049
Toluene	ug/m3	<2	2	2894049
Ethylbenzene	ug/m3	<2	2	2894049
Total Xylenes	ug/m3	<2	2	2894049
Aliphatic >C5-C6	ug/m3	<5	5	2894049
Aliphatic >C6-C8	ug/m3	<5	5	2894049
Aliphatic >C8-C10	ug/m3	<5	5	2894049
Aliphatic >C10-C12	ug/m3	<5	5	2894049
Aliphatic >C12-C16	ug/m3	<5	5	2894049
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5	5	2894049
Aromatic >C8-C10	ug/m3	<5	5	2894049
Aromatic >C10-C12	ug/m3	<5	5	2894049
Aromatic >C12-C16	ug/m3	<5	5	2894049
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	77		2894049
Bromochloromethane	%	76		2894049
D5-Chlorobenzene	%	75		2894049

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B291074
Report Date: 2012/06/29

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NW0132 **Collected** 2012/06/19
Sample ID SGMW-1 **Shipped** 2012/06/19
Matrix AIR **Received** 2012/06/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	2891441	N/A	2012/06/25	Yao Liang Sun
Canister Pressure (TO-15)	PRES	2891349	N/A	2012/06/25	Yao Liang Sun

Maxxam ID NW0132 Dup **Collected** 2012/06/19
Sample ID SGMW-1 **Shipped** 2012/06/19
Matrix AIR **Received** 2012/06/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	2891441	N/A	2012/06/25	Yao Liang Sun

Maxxam ID NW0133 **Collected** 2012/06/19
Sample ID DUP-1 **Shipped** 2012/06/19
Matrix AIR **Received** 2012/06/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	2891441	N/A	2012/06/25	Yao Liang Sun
Canister Pressure (TO-15)	PRES	2891349	N/A	2012/06/25	Yao Liang Sun

Maxxam ID NW0134 **Collected** 2012/06/19
Sample ID TRIP BLANK-1 **Shipped** 2012/06/19
Matrix AIR **Received** 2012/06/20

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	2894049	N/A	2012/06/27	Yao Liang Sun
Canister Pressure (TO-15)	PRES	2893916	N/A	2012/06/27	Yao Liang Sun

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B291074
Report Date: 2012/06/29

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

GENERAL COMMENTS

Sample NW0132-01: Canister received at -1.3 psig and was pressurized to 8.2 psig, for a 1.7X pressure dilution. A further dilution was prepared resulting in a 1700X final dilution. Alphatic >C5-C6 and >C6-C8 were analyzed at a 3400X dilution. The DL's were adjusted accordingly.

Sample NW0133-01: Canister received at -1.4 psig and was pressurized to 9.2 psig, for a 1.8X pressure dilution. A further dilution was prepared resulting in a 1800X final dilution. Alphatic >C5-C6 and >C6-C8 were analyzed at a 3600X dilution. The DL's were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B291074

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2891441	LSY	Method Blank	1,4-Difluorobenzene	2012/06/25		90	%	60 - 140
			Bromochloromethane	2012/06/25		89	%	60 - 140
			D5-Chlorobenzene	2012/06/25		88	%	60 - 140
			Benzene	2012/06/25	<1		ug/m3	
			Toluene	2012/06/25	<2		ug/m3	
			Ethylbenzene	2012/06/25	<2		ug/m3	
			Total Xylenes	2012/06/25	<2		ug/m3	
			Aliphatic >C5-C6	2012/06/25	<5		ug/m3	
			Aliphatic >C6-C8	2012/06/25	<5		ug/m3	
			Aliphatic >C8-C10	2012/06/25	<5		ug/m3	
			Aliphatic >C10-C12	2012/06/25	<5		ug/m3	
			Aliphatic >C12-C16	2012/06/25	<5		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2012/06/25	<5		ug/m3	
			Aromatic >C8-C10	2012/06/25	<5		ug/m3	
			Aromatic >C10-C12	2012/06/25	<5		ug/m3	
			Aromatic >C12-C16	2012/06/25	<5		ug/m3	
2894049	LSY	Method Blank	1,4-Difluorobenzene	2012/06/27		88	%	60 - 140
			Bromochloromethane	2012/06/27		88	%	60 - 140
			D5-Chlorobenzene	2012/06/27		84	%	60 - 140
			Benzene	2012/06/27	<1		ug/m3	
			Toluene	2012/06/27	<2		ug/m3	
			Ethylbenzene	2012/06/27	<2		ug/m3	
			Total Xylenes	2012/06/27	<2		ug/m3	
			Aliphatic >C5-C6	2012/06/27	<5		ug/m3	
			Aliphatic >C6-C8	2012/06/27	<5		ug/m3	
			Aliphatic >C8-C10	2012/06/27	<5		ug/m3	
			Aliphatic >C10-C12	2012/06/27	<5		ug/m3	
			Aliphatic >C12-C16	2012/06/27	<5		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2012/06/27	<5		ug/m3	
			Aromatic >C8-C10	2012/06/27	<5		ug/m3	
			Aromatic >C10-C12	2012/06/27	<5		ug/m3	
			Aromatic >C12-C16	2012/06/27	<5		ug/m3	
2891441	LSY	RPD [NW0132-01]	Benzene	2012/06/25	1.7		%	25
			Toluene	2012/06/25	2.3		%	25
			Ethylbenzene	2012/06/25	3.1		%	25
			Total Xylenes	2012/06/25	3.9		%	25
			Aliphatic >C5-C6	2012/06/25	0.4		%	25
			Aliphatic >C6-C8	2012/06/25	0.9		%	25
			Aliphatic >C8-C10	2012/06/25	1.1		%	25
			Aliphatic >C10-C12	2012/06/25	NC		%	25
			Aliphatic >C12-C16	2012/06/25	NC		%	25
			Aromatic >C7-C8 (TEX Excluded)	2012/06/25	NC		%	25
			Aromatic >C8-C10	2012/06/25	3.0		%	25
			Aromatic >C10-C12	2012/06/25	NC		%	25
			Aromatic >C12-C16	2012/06/25	NC		%	15
		LCS	1,4-Difluorobenzene	2012/06/25		100	%	60 - 140
			Bromochloromethane	2012/06/25		97	%	60 - 140
			D5-Chlorobenzene	2012/06/25		101	%	60 - 140
			Benzene	2012/06/25		91	%	70 - 130
			Toluene	2012/06/25		93	%	70 - 130
			Ethylbenzene	2012/06/25		94	%	70 - 130
			Total Xylenes	2012/06/25		95	%	70 - 130
2894049	LSY	LCS	1,4-Difluorobenzene	2012/06/27		101	%	60 - 140
			Bromochloromethane	2012/06/27		100	%	60 - 140
			D5-Chlorobenzene	2012/06/27		100	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report (Continued)

Maxxam Job Number: B291074

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2894049	LSY	LCS	Benzene	2012/06/27		89	%	70 - 130
			Toluene	2012/06/27		91	%	70 - 130
			Ethylbenzene	2012/06/27		95	%	70 - 130
			Total Xylenes	2012/06/27		97	%	70 - 130

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B291074

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

Maureen Smith

Maureen Smith, Supervisor, Volatiles

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
AIR CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED C of C # 65710

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Cannor associates.
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Dr. Toronto ON M3C 1K5	Address: 5420 Canotek Rd Ottawa ON K1J 1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@cannor-associates.ca
Ph: 416 441 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

	FIELD SAMPLE ID	Canister Serial #	Flow Regulator Serial #	Sample Collection Date YY/MM/DD	Sample Collection Time	Media Type (See Legend)	FLOW RATE	LENGTH OF SAMPLING (minutes)	BTEX	Aromatic/Aliphatic Hydrocarbon Fractionations	F1 (C6-C10) - F2 (C10-C16)	TPH fractionation
1	SGMW-1	1232	FX0721	12/06/19	11:45	S	20	70	X		X	X
2	DUP-1	389	FX0368	12/06/19	11:45	S	20	70	X		X	X
3	TRIP BLANK-1	1200	—	12/06/19	12:45	S	—	—	X		X	
4												
5												
6												
7												
8												
9												
10												
11												

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL PROJECT # (if applicable): P11995
IOL SITE # (if applicable): 88001626
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1070927

REGULATORY CRITERIA / DETECTION LIMITS: (PLEASE SPECIFY): N/A

SPECIAL INSTRUCTIONS: Test samples as per TOR
ICE - NA

LEGEND
S - Summa Can
T - Tube
TB - Tedlar Bag
O - Other(Specify)
*TEMP N/A for SUMMA CAN

TURNAROUND TIME
Standard (15 days) ☒
Rush (9 days) ☐
(6 days) ☐
(3 days) ☐
Date Required

COOLER BOX ID: 1	CUSTODY SEAL	YES	NO	COOLER BOX ID:	CUSTODY SEAL	YES	NO	COOLER BOX ID:	CUSTODY SEAL	YES	NO
TEMP 1 2 3	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

LAB USE ONLY
MAXXAM JOB # B291074

	RELINQUISHED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME:	RECEIVED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME:
1	LAILA CHALATI	2012/06/19	13:30	1Cp MAGDALENA COP	2012/06/20	07:45
2				2		
3				3		

SAMPLES
LABELED BY: N/A
VERIFIED BY: SEL

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates, A Parsons Company* Sampling Date: 2012/06/19

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B291074*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery			*X*	
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*The field duplicate RPD for Aromatic >C8-C10 (i.e. total PHC F1) (173%) is beyond the acceptable alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD		*X*		*All other field QC samples met the alert limits.*

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*N/A*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Nicole Hottot* Data Reviewed by (Signature):

Review Date: *2012/07/24*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 66253

Attention: Nancy Hazell
Parsons
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2013/01/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B307057
Received: 2013/01/16, 07:55

Sample Matrix: AIR
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
BTEX Fractionation in Air (TO-15mod)	3	BRL SOP-00304	EPA TO-15mod
Canister Pressure (TO-15)	3	BRL SOP-00304	EPA TO-15

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 66253

Attention: Nancy Hazell
Parsons
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2013/01/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B307057
Received: 2013/01/16, 07:55

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

Encryption Key

Kudrat Cheema
25 Jan 2013 11:24:52 -05:00

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

Kudrat Cheema, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B307057
Report Date: 2013/01/25

Parsons
Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

RESULTS OF ANALYSES OF AIR

Maxxam ID		QG2305	QG2306	QG2307	
Sampling Date		2013/01/15 11:30	2013/01/15 11:30	2013/01/15 11:45	
COC Number		66253	66253	66253	
	Units	**SGMW-1**	**DUP-3**	**TRIP BLANK-2**	**QC Batch**
Pressure on Receipt	psig	0	(-0.7)	(-13.1)	3098560

QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B307057
Report Date: 2013/01/25

Parsons
Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		QG2305	QG2305		QG2306		
Sampling Date		2013/01/15 11:30	2013/01/15 11:30		2013/01/15 11:30		
COC Number		66253	66253		66253		
	Units	**SGMW-1**	**SGMW-1 Lab-Dup**	**RDL**	**DUP-3**	**RDL**	**QC Batch**
Benzene	ug/m3	84000	83400	4400	90900	4600	3100024
Toluene	ug/m3	35600	35200	5900	39900	6100	3100024
Ethylbenzene	ug/m3	<5900	<5900	5900	<6100	6100	3100024
Total Xylenes	ug/m3	60800	64300	8100	73900	8400	3100024
Aliphatic >C5-C6	ug/m3	2350000	2360000	19000	2620000	19000	3100024
Aliphatic >C6-C8	ug/m3	2950000	2960000	19000	3270000	19000	3100024
Aliphatic >C8-C10	ug/m3	52900	58300	19000	72000	19000	3100024
Aliphatic >C10-C12	ug/m3	<19000	<19000	19000	<19000	19000	3100024
Aliphatic >C12-C16	ug/m3	<19000	<19000	19000	<19000	19000	3100024
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<19000	<19000	19000	<19000	19000	3100024
Aromatic >C8-C10	ug/m3	29600	30200	19000	34900	19000	3100024
Aromatic >C10-C12	ug/m3	<19000	<19000	19000	<19000	19000	3100024
Aromatic >C12-C16	ug/m3	<19000	<19000	19000	<19000	19000	3100024
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	83	82		81		3100024
Bromochloromethane	%	85	82		82		3100024
D5-Chlorobenzene	%	83	77		75		3100024

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B307057
Report Date: 2013/01/25

Parsons
Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		QG2307		
Sampling Date		2013/01/15 11:45		
COC Number		66253		
	Units	**TRIP BLANK-2**	**RDL**	**QC Batch**
Benzene	ug/m3	<1.2	1.2	3100024
Toluene	ug/m3	<1.6	1.6	3100024
Ethylbenzene	ug/m3	<1.6	1.6	3100024
Total Xylenes	ug/m3	<2.2	2.2	3100024
Aliphatic >C5-C6	ug/m3	<5.0	5.0	3100024
Aliphatic >C6-C8	ug/m3	<5.0	5.0	3100024
Aliphatic >C8-C10	ug/m3	<5.0	5.0	3100024
Aliphatic >C10-C12	ug/m3	<5.0	5.0	3100024
Aliphatic >C12-C16	ug/m3	<5.0	5.0	3100024
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	5.0	3100024
Aromatic >C8-C10	ug/m3	<5.0	5.0	3100024
Aromatic >C10-C12	ug/m3	<5.0	5.0	3100024
Aromatic >C12-C16	ug/m3	<5.0	5.0	3100024
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	102		3100024
Bromochloromethane	%	99		3100024
D5-Chlorobenzene	%	101		3100024

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B307057
Report Date: 2013/01/25

Parsons
Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID QG2305 **Collected** 2013/01/15
Sample ID SGMW-1 **Relinquished** 2013/01/15
Matrix AIR **Received** 2013/01/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	3100024	N/A	2013/01/17	Diane Temniuk
Canister Pressure (TO-15)	PRES	3098560	N/A	2013/01/17	Diane Temniuk

Maxxam ID QG2305 Dup **Collected** 2013/01/15
Sample ID SGMW-1 **Relinquished** 2013/01/15
Matrix AIR **Received** 2013/01/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	3100024	N/A	2013/01/17	Diane Temniuk

Maxxam ID QG2306 **Collected** 2013/01/15
Sample ID DUP-3 **Relinquished** 2013/01/15
Matrix AIR **Received** 2013/01/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	3100024	N/A	2013/01/17	Diane Temniuk
Canister Pressure (TO-15)	PRES	3098560	N/A	2013/01/17	Diane Temniuk

Maxxam ID QG2307 **Collected** 2013/01/15
Sample ID TRIP BLANK-2 **Relinquished** 2013/01/15
Matrix AIR **Received** 2013/01/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX Fractionation in Air (TO-15mod)	GC/MS	3100024	N/A	2013/01/17	Diane Temniuk
Canister Pressure (TO-15)	PRES	3098560	N/A	2013/01/17	Diane Temniuk

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B307057
Report Date: 2013/01/25

Parsons
Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

GENERAL COMMENTS

Sample QG2305-01: Sample was pressurized from 0psig to 40.4psig for a 3.7x pressure dilution and was run at a further 1000x dilution for a 3700x final dilution. DLs adjusted accordingly.

Sample QG2306-01: Sample was pressurized from -0.7psig to 38.8psig for a 3.8x pressure dilution and was run at a further 1000x dilution for a 3800x final dilution. DLs adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Parsons
Task Order#: 11070927
Site#: MZ.00151
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B307057

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3100024	DVO	Method Blank	1,4-Difluorobenzene	2013/01/17		94	%	60 - 140
			Bromochloromethane	2013/01/17		91	%	60 - 140
			D5-Chlorobenzene	2013/01/17		97	%	60 - 140
			Benzene	2013/01/17	<1.2		ug/m3	
			Toluene	2013/01/17	<1.6		ug/m3	
			Ethylbenzene	2013/01/17	<1.6		ug/m3	
			Total Xylenes	2013/01/17	<2.2		ug/m3	
			Aliphatic >C5-C6	2013/01/17	<5.0		ug/m3	
			Aliphatic >C6-C8	2013/01/17	<5.0		ug/m3	
			Aliphatic >C8-C10	2013/01/17	<5.0		ug/m3	
			Aliphatic >C10-C12	2013/01/17	<5.0		ug/m3	
			Aliphatic >C12-C16	2013/01/17	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2013/01/17	<5.0		ug/m3	
			Aromatic >C8-C10	2013/01/17	<5.0		ug/m3	
			Aromatic >C10-C12	2013/01/17	<5.0		ug/m3	
			Aromatic >C12-C16	2013/01/17	<5.0		ug/m3	
		RPD [QG2305-01]	Benzene	2013/01/17	0.7		%	25
			Toluene	2013/01/17	1.2		%	25
			Ethylbenzene	2013/01/17	NC		%	25
			Total Xylenes	2013/01/17	5.6		%	25
			Aliphatic >C5-C6	2013/01/17	0.4		%	25
			Aliphatic >C6-C8	2013/01/17	0.5		%	25
			Aliphatic >C8-C10	2013/01/17	NC		%	25
			Aliphatic >C10-C12	2013/01/17	NC		%	25
			Aliphatic >C12-C16	2013/01/17	NC		%	25
			Aromatic >C7-C8 (TEX Excluded)	2013/01/17	NC		%	25
			Aromatic >C8-C10	2013/01/17	NC		%	25
			Aromatic >C10-C12	2013/01/17	NC		%	25
			Aromatic >C12-C16	2013/01/17	NC		%	15
		LCS	1,4-Difluorobenzene	2013/01/17		118	%	60 - 140
			Bromochloromethane	2013/01/17		113	%	60 - 140
			D5-Chlorobenzene	2013/01/17		118	%	60 - 140
			Benzene	2013/01/17		88	%	70 - 130
			Toluene	2013/01/17		88	%	70 - 130
			Ethylbenzene	2013/01/17		86	%	70 - 130
			Total Xylenes	2013/01/17		84	%	70 - 130

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
LCS: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B307057

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

Maureen Smith, Supervisor, Volatiles

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
AIR CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED C of C # 66253

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: PARSONS
Contact Name: LORNE WEDGE	Contact Name: Nancy HAZELL
Address: 90 WYNFORD DRIVE TORONTO, ON M3C1K5	Address: 5420 CANOTEK RD. OTTAWA, ON K1J1E9
Email: k.lorne.wedge@esso.ca	Email: nancy.hazell@parsons.ca
Ph: 416 441 7866	Ph: 613.742.1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	Canister Serial #	Flow Regulator Serial #	Sample Collection Date YY/MM/DD	Sample Collection Time	Media Type (See Legend)	FLOW RATE	LENGTH OF SAMPLING (minutes)	BTEX	Aromatic/Aliphatic Hydrocarbon Fractionations	F1 (C6-C10) - F2 (C10-C16)	TPH FRACTIONATION
1	SGMW-1	1445	FX0648	13/01/15	11:30	S	21.2	66	X			X
2	DUP-3	1388	FX0677	13/01/15	11:30	S	21.2	66	X			X
3	TRIP BLANK-2	1188	—	13/01/15	11:45	S	—	—	X			X
4												
5												
6												
7												
8												
9												
10												
11												

IOL SITE LOCATION: ~~88001626~~ 88 1545 Woodroffe Ave, Ottawa
IOL PROJECT # (if applicable): ~~PH995~~ HZ.00151
IOL SITE # (if applicable): 88001626
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS: (PLEASE SPECIFY): N/A

SPECIAL INSTRUCTIONS: Test samples as per TDG regulations.

ICE-NA

LEGEND
S - Summa Can
T - Tedlar
TB - Tedlar Bag
O - Other(Specify)
*TEMP N/A for SUMMA CAN

TURNAROUND TIME
Standard (15 days) ☒
Rush (9 days) ☐
(6 days) ☐
(3 days) ☐
Date Required

COOLER BOX ID: 1	CUSTODY SEAL	YES	NO	COOLER BOX ID:	CUSTODY SEAL	YES	NO	COOLER BOX ID:	CUSTODY SEAL	YES	NO
TEMP 1 2 3	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

LAB USE ONLY
MAXXAM JOB # B307057
SAMPLES

RELINQUISHED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME:	RECEIVED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME:	LABELED BY:	VERIFIED BY:
1 LAILA CHALATI	2013/01/15	15:00	1 ASAD BHATTI	2013/01/16	07:55	J-L	ABH
2			2				
3			3				

IOL COC-AIR-2011/06/01 White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates, a Parsons Company* Sampling Date: 2013/01/15

Location: *1545 Woodroffe Avenue, Ottawa, Ontario* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B307057*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery			*X*	
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*N/A*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2013/02/19*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410133424
Line Item: 10
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 66843

Attention: Holly Losignore
Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2013/10/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3H8358
Received: 2013/10/18, 17:58

Sample Matrix: AIR
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary Reference
BTEX and CCME Compounds in Air(TO-15mod)	3	BRL SOP-00304	EPA TO-15mod
BTEX Fractionation in Air (TO-15mod)	3	BRL SOP-00304	EPA TO-15mod
Canister Pressure (TO-15)	3	BRL SOP-00304	EPA TO-15

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 4410133424
Line Item: 10
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 66843

Attention: Holly Losignore
Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2013/10/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3H8358
Received: 2013/10/18, 17:58

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

Encryption Key

Kudrat Kaur
Kudrat Bajwa
29 Oct 2013 16:25:00 -04:00

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

Kudrat Bajwa, Project Manager
Email: KBajwa@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B3H8358
Report Date: 2013/10/29

Parsons
Task Order#: 4410133424, Line Item: 10
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02

RESULTS OF ANALYSES OF AIR

Maxxam ID		TN4957		TN4958	TN4959	
Sampling Date		2013/10/17 16:15		2013/10/17 16:00	2013/10/17 16:00	
COC Number		66843		66843	66843	
	Units	**TRIP BLANK-1**	**QC Batch**	**DUP-1**	**SGMW-2**	**QC Batch**
Pressure on Receipt	psig	(-13.6)	3399295	(-1.7)	(-1.7)	3398712

QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3H8358
Report Date: 2013/10/29

Parsons
Task Order#: 4410133424, Line Item: 10
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		TN4957			TN4958	TN4958		
Sampling Date		2013/10/17 16:15			2013/10/17 16:00	2013/10/17 16:00		
COC Number		66843			66843	66843		
	Units	**TRIP BLANK-1**	**RDL**	**QC Batch**	**DUP-1**	**DUP-1 Lab-Dup**	**RDL**	**QC Batch**
F1-BTEX, C6-C10 (as Toluene)	ug/m3	<5.0	5.0	3399312	17600000	20100000	24000	3398718
F2, C10-C16 (as Decane)	ug/m3	<5.0	5.0	3399312	<24000	<24000	24000	3398718
Benzene	ug/m3	<1.2	1.2	3399317	150000	161000	5700	3398720
Toluene	ug/m3	<1.6	1.6	3399317	517000	553000	7600	3398720
Ethylbenzene	ug/m3	<1.6	1.6	3399317	117000	124000	7600	3398720
Total Xylenes	ug/m3	<2.2	2.2	3399317	457000	478000	10000	3398720
Aliphatic >C5-C6	ug/m3	<5.0	5.0	3399317	3980000	4340000	24000	3398720
Aliphatic >C6-C8	ug/m3	<5.0	5.0	3399317	10500000	11300000	24000	3398720
Aliphatic >C8-C10	ug/m3	<5.0	5.0	3399317	503000	552000	24000	3398720
Aliphatic >C10-C12	ug/m3	<5.0	5.0	3399317	<24000	<24000	24000	3398720
Aliphatic >C12-C16	ug/m3	<5.0	5.0	3399317	<24000	<24000	24000	3398720
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	5.0	3399317	<24000	<24000	24000	3398720
Aromatic >C8-C10	ug/m3	<5.0	5.0	3399317	117000	125000	24000	3398720
Aromatic >C10-C12	ug/m3	<5.0	5.0	3399317	<24000	<24000	24000	3398720
Aromatic >C12-C16	ug/m3	<5.0	5.0	3399317	<24000	<24000	24000	3398720
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene	%	82		3399317	67	70		3398720
Bromochloromethane	%	81		3399317	62	64		3398720
D5-Chlorobenzene	%	78		3399317	67	72		3398720

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3H8358
Report Date: 2013/10/29

Parsons
Task Order#: 4410133424, Line Item: 10
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Maxxam ID		TN4959		
Sampling Date		2013/10/17 16:00		
COC Number		66843		
	Units	**SGMW-2**	**RDL**	**QC Batch**
F1-BTEX, C6-C10 (as Toluene)	ug/m3	19200000	24000	3398718
F2, C10-C16 (as Decane)	ug/m3	<24000	24000	3398718
Benzene	ug/m3	157000	5700	3398720
Toluene	ug/m3	543000	7600	3398720
Ethylbenzene	ug/m3	137000	7600	3398720
Total Xylenes	ug/m3	558000	10000	3398720
Aliphatic >C5-C6	ug/m3	4110000	24000	3398720
Aliphatic >C6-C8	ug/m3	10700000	24000	3398720
Aliphatic >C8-C10	ug/m3	591000	24000	3398720
Aliphatic >C10-C12	ug/m3	<24000	24000	3398720
Aliphatic >C12-C16	ug/m3	<24000	24000	3398720
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<24000	24000	3398720
Aromatic >C8-C10	ug/m3	139000	24000	3398720
Aromatic >C10-C12	ug/m3	<24000	24000	3398720
Aromatic >C12-C16	ug/m3	<24000	24000	3398720
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	73		3398720
Bromochloromethane	%	67		3398720
D5-Chlorobenzene	%	71		3398720

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3H8358
Report Date: 2013/10/29

Parsons
Task Order#: 4410133424, Line Item: 10
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID TN4957 **Collected** 2013/10/17
Sample ID TRIP BLANK-1 **Relinquished** 2013/10/17
Matrix AIR **Received** 2013/10/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15	GC/MS	3399312	N/A	2013/10/24	Jie Wu
BTEX Fractionation in Air (TO-15mod)	GC/MS	3399317	N/A	2013/10/24	Jie Wu
Canister Pressure (TO-15)	PRES	3399295	N/A	2013/10/24	Jie Wu

Maxxam ID TN4958 **Collected** 2013/10/17
Sample ID DUP-1 **Relinquished** 2013/10/17
Matrix AIR **Received** 2013/10/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15	GC/MS	3398718	N/A	2013/10/23	Jie Wu
BTEX Fractionation in Air (TO-15mod)	GC/MS	3398720	N/A	2013/10/23	Jie Wu
Canister Pressure (TO-15)	PRES	3398712	N/A	2013/10/23	Jie Wu

Maxxam ID TN4958 Dup **Collected** 2013/10/17
Sample ID DUP-1 **Relinquished** 2013/10/17
Matrix AIR **Received** 2013/10/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15	GC/MS	3398718	N/A	2013/10/23	Jie Wu
BTEX Fractionation in Air (TO-15mod)	GC/MS	3398720	N/A	2013/10/23	Jie Wu

Maxxam ID TN4959 **Collected** 2013/10/17
Sample ID SGMW-2 **Relinquished** 2013/10/17
Matrix AIR **Received** 2013/10/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
BTEX and CCME Compounds in Air(TO-15	GC/MS	3398718	N/A	2013/10/23	Jie Wu
BTEX Fractionation in Air (TO-15mod)	GC/MS	3398720	N/A	2013/10/23	Jie Wu
Canister Pressure (TO-15)	PRES	3398712	N/A	2013/10/23	Jie Wu

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3H8358
Report Date: 2013/10/29

Parsons
Task Order#: 4410133424, Line Item: 10
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02

GENERAL COMMENTS

Sample TN4958-01: Canister received at -1.7psig and was pressurized to 9.5psig, for a 1.9x pressure dilution.
A 2500x dilution was prepared and analyzed, resulting in a 4750x final dilution. The DLs were adjusted accordingly.

Sample TN4959-01: Canister received at -1.7psig and was pressurized to 10.5psig, for a 1.9x pressure dilution.
A 2500x dilution was prepared and analyzed, resulting in a 4750x final dilution. The DLs were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Parsons
Task Order#: 4410133424
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B3H8358

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3398718	JIW	Method Blank	F1-BTEX, C6-C10 (as Toluene)	2013/10/23	<5.0		ug/m3	
			F2, C10-C16 (as Decane)	2013/10/23	<5.0		ug/m3	
3398720	JIW	Method Blank	1,4-Difluorobenzene	2013/10/23		78	%	60 - 140
			Bromochloromethane	2013/10/23		75	%	60 - 140
			D5-Chlorobenzene	2013/10/23		71	%	60 - 140
			Benzene	2013/10/23	<1.2		ug/m3	
			Toluene	2013/10/23	<1.6		ug/m3	
			Ethylbenzene	2013/10/23	<1.6		ug/m3	
			Total Xylenes	2013/10/23	<2.2		ug/m3	
			Aliphatic >C5-C6	2013/10/23	<5.0		ug/m3	
			Aliphatic >C6-C8	2013/10/23	<5.0		ug/m3	
			Aliphatic >C8-C10	2013/10/23	<5.0		ug/m3	
			Aliphatic >C10-C12	2013/10/23	<5.0		ug/m3	
			Aliphatic >C12-C16	2013/10/23	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2013/10/23	<5.0		ug/m3	
			Aromatic >C8-C10	2013/10/23	<5.0		ug/m3	
			Aromatic >C10-C12	2013/10/23	<5.0		ug/m3	
			Aromatic >C12-C16	2013/10/23	<5.0		ug/m3	
3399312	JIW	Method Blank	F1-BTEX, C6-C10 (as Toluene)	2013/10/24	<5.0		ug/m3	
			F2, C10-C16 (as Decane)	2013/10/24	<5.0		ug/m3	
3399317	JIW	Method Blank	1,4-Difluorobenzene	2013/10/24		91	%	60 - 140
			Bromochloromethane	2013/10/24		89	%	60 - 140
			D5-Chlorobenzene	2013/10/24		83	%	60 - 140
			Benzene	2013/10/24	<1.2		ug/m3	
			Toluene	2013/10/24	<1.6		ug/m3	
			Ethylbenzene	2013/10/24	<1.6		ug/m3	
			Total Xylenes	2013/10/24	<2.2		ug/m3	
			Aliphatic >C5-C6	2013/10/24	<5.0		ug/m3	
			Aliphatic >C6-C8	2013/10/24	<5.0		ug/m3	
			Aliphatic >C8-C10	2013/10/24	<5.0		ug/m3	
			Aliphatic >C10-C12	2013/10/24	<5.0		ug/m3	
			Aliphatic >C12-C16	2013/10/24	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2013/10/24	<5.0		ug/m3	
			Aromatic >C8-C10	2013/10/24	<5.0		ug/m3	
			Aromatic >C10-C12	2013/10/24	<5.0		ug/m3	
			Aromatic >C12-C16	2013/10/24	<5.0		ug/m3	
3398718	JIW	RPD [TN4958-01]	F1-BTEX, C6-C10 (as Toluene)	2013/10/23	13.4		%	25
			F2, C10-C16 (as Decane)	2013/10/23	NC		%	25
3398720	JIW	RPD [TN4958-01]	Benzene	2013/10/23	7.5		%	25
			Toluene	2013/10/23	6.9		%	25
			Ethylbenzene	2013/10/23	5.5		%	25
			Total Xylenes	2013/10/23	4.4		%	25
			Aliphatic >C5-C6	2013/10/23	8.6		%	25
			Aliphatic >C6-C8	2013/10/23	7.4		%	25
			Aliphatic >C8-C10	2013/10/23	9.3		%	25
			Aliphatic >C10-C12	2013/10/23	NC		%	25
			Aliphatic >C12-C16	2013/10/23	NC		%	25
			Aromatic >C7-C8 (TEX Excluded)	2013/10/23	NC		%	25
			Aromatic >C8-C10	2013/10/23	NC		%	25
			Aromatic >C10-C12	2013/10/23	NC		%	25
			Aromatic >C12-C16	2013/10/23	NC		%	15
		LCS	1,4-Difluorobenzene	2013/10/23		102	%	60 - 140
			Bromochloromethane	2013/10/23		99	%	60 - 140
			D5-Chlorobenzene	2013/10/23		101	%	60 - 140
			Benzene	2013/10/23		92	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Parsons
Task Order#: 4410133424
Site#: MZ.00151
Site Location: 1545 WOODROFFE AVE. @ MEDHURST OTTAWA
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B3H8358

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3398720	JIW	LCS	Toluene	2013/10/23		93	%	70 - 130
			Ethylbenzene	2013/10/23		93	%	70 - 130
			Total Xylenes	2013/10/23		95	%	70 - 130
3399317	JIW	LCS	1,4-Difluorobenzene	2013/10/24		101	%	60 - 140
			Bromochloromethane	2013/10/24		102	%	60 - 140
			D5-Chlorobenzene	2013/10/24		107	%	60 - 140
			Benzene	2013/10/24		92	%	70 - 130
			Toluene	2013/10/24		91	%	70 - 130
			Ethylbenzene	2013/10/24		92	%	70 - 130
			Total Xylenes	2013/10/24		93	%	70 - 130

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
LCS: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B3H8358

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

Angel Guerrero, Team Leader, VOC Air

Maureen Smith, Supervisor, Volatiles

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
AIR CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 66843

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☑ Imperial Oil ☐ ExxonMobil	Company Name: PARSONS
Contact Name: LORNE WEDGE	Contact Name: HOLLY LOSIGNORE
Address: 90 WYNFORD DRIVE TORONTO ON	Address: 3715 Laird Road, Mississauga Ontario, Suite 100, L5L 0A3
Email: Lorne.Wedge@esso.ca	Email: HOLLY.LOSIGNORE@parsons.com
Ph: 416-441-7866	Ph: 905-569-4111
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	Canister Serial #	Flow Regulator Serial #	Sample Collection Date YY/MM/DD	Sample Collection Time	Media Type (See Legend)	FLOW RATE (mL/min)	LENGTH OF SAMPLING (minutes)	BTEX	Aromatic/Aliphatic Hydrocarbon Fractionations	F1 (C6-C10) - F2 (C10-C16)
1	TRIP BLANK-1	1190	—	13/10/17	16:15	S	—		X	X	X
2	DUP-1	2067	FX0653	13/10/17	16:00	S	23 mL/min TM	120 min	X	X	X
3	SGMW-2	1297	FX0653	13/10/17	16:00	S	23 mL/min TM	120 min	X	X	X
4											
5											
6											
7											
8											
9											
10											
11											

IOL SITE LOCATION: 1545 WOODROFFE AVE. @ TM ~~MEDHURST~~ OTTAWA

IOL PROJECT # (if applicable): MZ.00151

IOL SITE # (if applicable): NA

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410133424

REGULATORY CRITERIA / DETECTION LIMITS: (PLEASE SPECIFY): ~~REG 153 (AMENDED) TABLE 3~~ TM ~~MOE~~ TM N/A

SPECIAL INSTRUCTIONS: ICE-NA

TEST SAMPLES AS PER TOC

LEGEND
S - Summa Can
T - Tedlar Bag
TB - Tedlar Bag
O - Other(Specify)
*TEMP N/A for SUMMA CAN

TURNAROUND TIME
Standard (15 days) ☒
Rush (9 days) ☐
(6 days) ☐
(3 days) ☐
Date Required

COOLER BOX ID:	CUSTODY SEAL	YES	NO	COOLER BOX ID:	CUSTODY SEAL	YES	NO	COOLER BOX ID:	CUSTODY SEAL	YES	NO
1	PRESENT	✓			PRESENT				PRESENT		
TEMP 1 2 3	INTACT	✓		TEMP 1 2 3	INTACT			TEMP 1 2 3	INTACT		

LAB USE ONLY
MAXXAM JOB # B3H8358

	RELINQUISHED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME:	RECEIVED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME:
1	THEO MOSHONAS	2013/10/17	17:00	Ashitha Sukumaran ASHITHA SUKUMARAN	2013/10/18	17:58
2				2		
3				3		

SAMPLES
LABELED BY: NNA
VERIFIED BY: SEL

IOL COC-AIR-2011/06/01 White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates, A Parsons Company* Sampling Date: 2013/10/17

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B3H8358*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery			*X*	
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD	*X*			

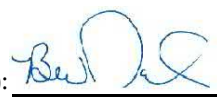
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*N/A*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 

Review Date: *2013/11/07*

Revision Date (if applicable): Revised by (Signature):

APPENDIX C

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

A summary of the lab and field QA/QC issues identified in this report are summarized in Table C-1.

The soil field QA/QC program consisted of one field duplicate for the analysis of BTEX, PHC fractions F1 to F4, hexane and lead and one field blank methanol sample for analysis of BTEX, PHC fraction F1 and hexane.

The soil gas field QA/QC program consisted of three field duplicates and three trip blank samples for the analysis of BTEX and aliphatic and aromatic hydrocarbon fractionation.

For the field duplicate sample, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit.

The designated field duplicate RPD alert limits are presented in Table C-2 for soil. As indicated, all of the RPDs were within acceptable limits.

The designated RPD alert limits are presented in Table C-4 for soil vapour. As indicated, all of the RPDs were within acceptable limits with the exceptions presented in Table C-1.

The soil field blank data were compared to the alert limits and are presented in Table C-3. As indicated, all of the results were within the alert limits.

The soil gas trip blank data are presented in Table C-5. As indicated, all of the results were within the alert limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument surrogate recoveries for soil gas samples that were analyzed, and (b) the analysis of method blank, matrix duplicate and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. As indicated, no laboratory QA/QC issues were identified.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE C-1

FIELD AND LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL ISSUES

Maxxam Job #	Lab Sample ID	DQW Number	Sample Name	Matrix	Test Affected	Deviation	Interpretation
B291074	NW0132 NW0133	N/A	SGMW-1 DUP-1	Soil Gas	PHC F1	The field duplicate RPD for Aromatic >C8-C10 (i.e. total PHC F1) (173%) is beyond the acceptable alert limits.	This indicates increased variability in the field data. The sample analytical results for both the original and field duplicate were significantly below the applicable site condition standards. In addition, the other lab quality controls meet all acceptance criteria. Therefore, it should not materially affect the findings of the assessment.

N/A – Not applicable

TABLE C-2

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	SGMW-1-1.8-2.4	RDL	DUP-2 FIELD DUPLICATE SGMW-1-1.8-2.4	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B280936		B280936			
Maxxam Sample ID	NR1903		NR1904			
Depth (mbgs)	1.8-2.4		1.8-2.4			
Date Sampled (yyyy/mm/dd)	2012/05/31		2012/05/31			
PARAMETERS						
Benzene	0.39	0.020	0.50	0.020	25%	100
Toluene	0.68	0.020	0.69	0.020	1%	100
Ethylbenzene	1.2	0.020	1.8	0.020	40%	100
Total Xylenes	4.7	0.040	7.7	0.040	48%	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	11	10	19	10	NC	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	37	10	47	10	NC	100
Petroleum Hydrocarbons F4 (>C34 - C50)	27	10	17	10	NC	100
Hexane	0.59	0.50	1.1	0.50	NC	100
Lead	5.8	5.0	5.3	5.0	NC	100

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds RPD alert limit
Resutlts for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-3

SOIL FIELD BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND HEXANE

SAMPLE LOCATIONS	RDL	FIELD BLANK-1	
Maxxam Certificate of Analysis No.		B280942	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		NR1915	
Date Sampled (yyyy/mm/dd)		2012/05/31	
PARAMETERS			
Benzene	0.020	<0.020	No
Toluene	0.020	<0.020	No
Ethylbenzene	0.020	<0.020	No
Total Xylenes	0.040	<0.040	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	10	<10	No
Hexane	0.50	<0.50	No

a - BTEX have been subtracted from the fraction.
RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks are 1x RDL for BTEX, hexane and petroleum hydrocarbon fraction F1.
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-4

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL VAPOUR FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	SGMW-1	RDL	DUP-1 FIELD DUPLICATE SGMW-1	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B291074		B291074			
Maxxam Sample ID	NW0132		NW0133			
Date Sampled (yyyy/mm/dd)	2012/06/19		2012/06/19			
PARAMETERS						
Benzene	176 000	1	179 000	1	2%	50
Toluene	458 000	2	436 000	2	5%	50
Ethylbenzene	31 100	2	25 100	2	21%	50
Total Xylenes	371 000	2	247 000	2	40%	50
PHC F1						
Aliphatic >C5-C6	3 190 000	5	3 370 000	5	5%	50
Aliphatic >C6-C8	7 150 000	5	7 260 000	5	2%	50
Aliphatic >C8-C10	255 000	5	180 000	5	34%	50
Aromatic >C7-C8*	<9000	5	<9000	5	NC	50
Aromatic >C8-C10	159 000	5	11 500	5	**173%**	50
Total PHC F1	<10 763 000	NA	<10 830 500	NA	NA	NA
PHC F2						
Aliphatic >C10-C12	<9000	5	<9000	5	NC	50
Aliphatic >C12-C16	25 500	5	17 300	5	38%	50
Aromatic >C10-C12	<9000	5	<9000	5	NC	50
Aromatic >C12-C16	<9000	5	<9000	5	NC	50
Total PHC F2	<52 500	NA	<44 300	NA	NA	NA

a - Alert limits used for field duplicate samples
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
* - Toluene, ethylbenzene, and xylenes excluded
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-4

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL VAPOUR FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	SGMW-1	RDL	DUP-3 FIELD DUPLICATE SGMW-1	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B307057		B307057			
Maxxam Sample ID	QG2305		QG2306			
Date Sampled (yyyy/mm/dd)	2013/01/15		2013/01/15			
PARAMETERS						
Benzene	84 000	4400	90 900	4600	8%	50
Toluene	35 600	5900	39 900	6100	11%	50
Ethylbenzene	<5900	5900	<6100	6100	NC	50
Total Xylenes	60 800	8100	73 900	8400	19%	50
PHC F1						
Aliphatic >C5-C6	2 350 000	19 000	2 620 000	19 000	11%	50
Aliphatic >C6-C8	2 950 000	19 000	3 270 000	19 000	10%	50
Aliphatic >C8-C10	52 900	19 000	72 000	19 000	NC	50
Aromatic >C7-C8 (TEX Excl.)	<19000	19 000	<19000	19 000	NC	50
Aromatic >C8-C10	29 600	19 000	34 900	19 000	NC	50
Total PHC F1	<5 401 500	NA	<6 015 900	NA	NA	NA
PHC F2						
Aliphatic >C10-C12	<19 000	19 000	<19 000	19 000	NC	50
Aliphatic >C12-C16	<19 000	19 000	<19 000	19 000	NC	50
Aromatic >C10-C12	<19 000	19 000	<19 000	19 000	NC	50
Aromatic >C12-C16	<19 000	19 000	<19 000	19 000	NC	50
Total PHC F2	<76 000	NA	<76 000	NA	NA	NA

a- Alert limits used for field duplicate samples
NA - Not applicable
NC - Not Calculated
RDL - Reportable detection limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per cubic metre (µg/m³)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-4

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL VAPOUR FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	SGMW-2	RDL	DUP-1 FIELD DUPLICATE SGMW-2	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B3H8358		B3H8358			
Maxxam Sample ID	TN4959		TN4958			
Date Sampled (yyyy/mm/dd)	2013/10/17		2013/10/17			
PARAMETERS						
Benzene	157000	5700	150 000	5700	5%	50
Toluene	543000	7600	517 000	7600	5%	50
Ethylbenzene	137000	7600	117 000	7600	16%	50
Total Xylenes	558000	10 000	457 000	10 000	20%	50
PHC F1						
Aliphatic >C5-C6	4 110 000	24 000	3 980 000	24 000	3%	50
Aliphatic >C6-C8	10 700 000	24 000	10 500 000	24 000	2%	50
Aliphatic >C8-C10	591 000	24 000	503 000	24 000	16%	50
Aromatic >C7-C8 (TEX Excl.)	<24 000	24 000	<24 000	24 000	NC	50
Aromatic >C8-C10	139 000	24 000	117 000	24 000	NC	50
Total PHC F1	<15 564 000	NA	<15 124 000	NA	NA	NA
PHC F2						
Aliphatic >C10-C12	<24 000	24 000	<24 000	24 000	NC	50
Aliphatic >C12-C16	<24 000	24 000	<24 000	24 000	NC	50
Aromatic >C10-C12	<24 000	24 000	<24 000	24 000	NC	50
Aromatic >C12-C16	<24 000	24 000	<24 000	24 000	NC	50
Total PHC F2	<96 000	NA	<96 000	NA	NA	NA

a- Alert limits used for field duplicate samples
NA - Not applicable
NC - Not Calculated
RDL - Reportable detection limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per cubic metre ($\mu g/m^3$)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-5

SOIL VAPOUR TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	RDL	TRIP BLANK-1	
Maxxam Certificate of Analysis No.		B291074	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		NW0134	
Date Sampled (yyyy/mm/dd)		2012/06/19	
PARAMETERS			
Benzene	1	<1	No
Toluene	2	<2	No
Ethylbenzene	2	<2	No
Total Xylenes	2	<2	No
PHC F1			
Aliphatic >C5-C6	5	<5	No
Aliphatic >C6-C8	5	<5	No
Aliphatic >C8-C10	5	<5	No
Aromatic >C7-C8*	5	<5	No
Aromatic >C8-C10	5	<5	No
Total PHC F1	NA	<25	NA
PHC F2			
Aliphatic >C10-C12	5	<5	No
Aliphatic >C12-C16	5	<5	No
Aromatic >C10-C12	5	<5	No
Aromatic >C12-C16	5	<5	No
Total PHC F2	NA	<20	NA

RDL - Reportable detection limit
"-" - Not analyzed
* - Toluene, ethylbenzene, and xylenes excluded
NA - Not applicable
BOLD - Exceeds alert limit
Note - Alert limits for trip blanks are 5x RDL for BTEX and TPH fractionation.
Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-5

SOIL VAPOUR TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	RDL	TRIP BLANK-2	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B307057	
Maxxam Sample ID		QG2307	
Date Sampled (yyyy/mm/dd)		2013/01/15	
PARAMETERS			
Benzene	1.2	<1.2	No
Toluene	1.6	<1.6	No
Ethylbenzene	1.6	<1.6	No
Total Xylenes	2.2	<2.2	No
PHC F1			
Aliphatic >C5-C6	5.0	<5.0	No
Aliphatic >C6-C8	5.0	<5.0	No
Aliphatic >C8-C10	5.0	<5.0	No
Aromatic >C7-C8 (TEX Excl.) *	5.0	<5.0	No
Aromatic >C8-C10	5.0	<5.0	No
Total PHC F1	NA	<25	NA
PHC F2			
Aliphatic >C10-C12	5.0	<5.0	No
Aliphatic >C12-C16	5.0	<5.0	No
Aromatic >C10-C12	5.0	<5.0	No
Aromatic >C12-C16	5.0	<5.0	No
Total PHC F2	NA	<20	NA

RDL - Reportable detection limit
"-" - Not analyzed
* - Toluene, ethylbenzene, and xylenes excluded
NA - Not applicable
BOLD - Exceeds alert limit
Note - Alert limits for Trip blanks are 5x RDL for BTEX and TPH fractionation.
Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-5

SOIL VAPOUR TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS

SAMPLE LOCATIONS	RDL	TRIP BLANK-1	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B3H8358	
Maxxam Sample ID		TN4957	
Date Sampled (yyyy/mm/dd)		2013/10/17	
PARAMETERS			
Benzene	1.2	<1.2	No
Toluene	1.6	<1.6	No
Ethylbenzene	1.6	<1.6	No
Total Xylenes	2.2	<2.2	No
PHC F1			
Aliphatic >C5-C6	5.0	<5.0	No
Aliphatic >C6-C8	5.0	<5.0	No
Aliphatic >C8-C10	5.0	<5.0	No
Aromatic >C7-C8 (TEX Excl.) *	5.0	<5.0	No
Aromatic >C8-C10	5.0	<5.0	No
Total PHC F1	NA	<25	NA
PHC F2			
Aliphatic >C10-C12	5.0	<5.0	No
Aliphatic >C12-C16	5.0	<5.0	No
Aromatic >C10-C12	5.0	<5.0	No
Aromatic >C12-C16	5.0	<5.0	No
Total PHC F2	NA	<20	NA

RDL - Reportable detection limit
"-" - Not analyzed
* - Toluene, ethylbenzene, and xylenes excluded
NA - Not applicable
BOLD - Exceeds alert limit
Note - Alert limits for Trip blanks are 5x RDL for BTEX and TPH fractionation.
Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

SUBSURFACE INVESTIGATION
BOULEVARD ADJACENT TO 1545 WOODROFFE AVENUE
OTTAWA, ONTARIO

Prepared for:

Imperial Oil
90 Wynford Drive
Toronto, Ontario M3C 1K5

Prepared by:

O'Connor Associates Environmental Inc.,
A Parsons Company
5420 Canotek Road, Suite 104
Ottawa, Ontario K1J 1E9
Phone: (613) 742-1781

Ref. No.: 10-8518T02

These documents and the information contained therein are confidential - property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial Freedom of Information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch.II"1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch.I"1", as such legislation may be amended or replaced from time to time.

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

Distribution:
3 copies – Imperial Oil, Remediation and Reclamation Services, Surplus Property Management

October 11, 2012

SUMMARY

SITE	Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario
Type of Facility	Municipal Boulevard
Municipal Zoning	Not Applicable
Adjacent Land Use	Residential
Aquifer Usage in 250 m radius	None
Reference Standards	Woodroffe Avenue: MOE (2011) Table 3 (non-potable) site condition standards (medium and fine textured soils, industrial/commercial/community property use) Medhurst Drive: MOE (2011) Table 3 (non-potable) site condition standards (coarse textured soils, industrial/commercial/community property use)
Type of Organic Vapour Meter Used	Gastechtor 1238ME
Date(s) of Soil Sampling	May 31, 2012
Date(s) of Groundwater Sampling	June 14, 2012
Number of Test Pits Advanced	0
Number of Boreholes Drilled	2
Number of Wells Installed in Boreholes	2

SUMMARY OF BOREHOLES DRILLED:

Description	BH-201	BH-202
Well Installed	Yes	Yes
Depth (mbgs)	6.1	5.2
Dominant Soil Type	Gravel and sand fill, silt and sand	Gravel fill, silt and sand
Depth to Groundwater (mbgs)	4.53	4.47
Screened Interval (mbgs)	3.1 to 6.1	2.1 to 5.2
Free Product Thickness (mm)	Not Detected	Not Detected
Exceeded Soil Standards	No	No
Exceeded Groundwater Standards	No	No
Vertical Soil Impact Delineation Achieved	Not Applicable	Not Applicable

Notes:

mbgs – metres below ground surface
mm – millimetres
MOE – Ontario Ministry of the Environment

TABLE OF CONTENTS

Page

SUMMARY i

LIST OF TABLES: iii

LIST OF DRAWINGS: iii

LIST OF APPENDICES: iii

1.0 INTRODUCTION 1
- 1.1 Background 1
- 1.2 Scope of Work 1

2.0 FIELD ACTIVITIES 2
- 2.1 Borehole Day-Lighting and Drilling 2
- 2.2 Monitoring Well Installation 2
- 2.3 Soil Sampling 2
- 2.4 Groundwater Monitoring and Sampling 3
- 2.5 Surveying 5
- 2.6 Quality Assurance and Quality Control 5
- 2.7 Laboratory Analyses 5

3.0 FINDINGS 6
- 3.1 Field Observations 6
  - 3.1.1 Stratigraphy 6
  - 3.1.2 Vapour Concentrations 6
  - 3.1.3 Groundwater 6
  - 3.1.4 Free Product 6
- 3.2 Selected Site Condition Standards 7
  - 3.2.1 Site Sensitivity 7
  - 3.2.2 Groundwater Condition 7
  - 3.2.3 Shallow Soil Property 7
  - 3.2.4 Nearby Water Body 7
  - 3.2.5 Soil Texture 7
  - 3.2.6 Property Use 8
  - 3.2.7 Full Depth or Stratified Site Condition Standards 8
  - 3.2.8 Selected Site Condition Standards 8
- 3.3 Soil Analytical Results 8
- 3.4 Groundwater Analytical Results 9
- 3.5 Quality Assurance and Quality Control Results 9

4.0 SUMMARY AND CONCLUSIONS 9

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE 10

LIST OF TABLES:

Table 1 Groundwater Monitoring Results
Table 2 Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead
Table 3 Soil Analytical Results – pH
Table 4 Groundwater Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead

LIST OF DRAWINGS:

Drawing No. 1 Site Location Map
Drawing No. 2 Site Plan
Drawing No. 3 Elevation of the Groundwater Potentiometric Surface – 2012/06/14
Drawing No. 4 Soil Analytical Results – Petroleum Hydrocarbons, Hexane and Lead
Drawing No. 5 Groundwater Analytical Results – Petroleum Hydrocarbons, Hexane and Lead
Drawing No. 6 Groundwater Analytical Results – Petroleum Hydrocarbons, Hexane and Lead

LIST OF APPENDICES:

Appendix A Borehole Logs
Appendix B MOE Well Registration Record
Appendix C Laboratory Certificates of Analysis – Soil and Groundwater
Appendix D Grain Size Distribution Report
Appendix E Quality Assurance and Quality Control

1.0 INTRODUCTION

O'Connor Associates Environmental Inc., a Parsons Company (Parsons) was retained by Imperial Oil to conduct a subsurface investigation on a portion of the municipal boulevard (the Site) adjacent to the west and south of the operating Esso retail fuel outlet, located at 1545 Woodroffe Avenue, in Ottawa, Ontario.

The purpose of the assessment was to assess for potential contaminants of concern in the soil and groundwater on-site based on the results of a Phase Two Environmental Site Assessment conducted at the Esso retail fuel outlet by Parsons in 2011. The fieldwork was conducted from May 31 to June 14, 2012.

1.1 BACKGROUND

The Site location is shown on Drawing No. 1 and a Site plan with the monitoring well location is shown on Drawing No. 2.

The Site is a municipal boulevard along Woodroffe Avenue and Medhurst Drive.

1.2 SCOPE OF WORK

The scope of work was to perform the following activities:

- Advance two boreholes (BH-201 and BH-202) on Woodroffe Avenue and install a monitoring well in each.
- Collect soil samples from each borehole for laboratory analysis of the following parameters: benzene, toluene, ethylbenzene, xylenes (BTEX); petroleum hydrocarbon (PHC) fractions F1 to F4; hexane; and lead.
- Collect soil samples for laboratory analysis of grain size and pH to facilitate selection of the site condition standards.
- Monitor all of the new and existing accessible wells for subsurface vapour concentrations, water levels and the presence or absence of light non-aqueous phase liquid hydrocarbons (free product).
- Collect groundwater samples from all of the new and existing accessible monitoring wells for laboratory analysis of the following parameters: BTEX; PHC fractions F1 to F4; hexane; and lead.
- Prepare a report that describes the field activities and the results of the Site assessment.

2.0 FIELD ACTIVITIES

Prior to proceeding with the subsurface investigation, various utility representatives and a private utility locating contractor identified underground utility locations.

All field procedures were conducted in accordance with the Ontario Ministry of the Environment (MOE) *Guidance for Completing Phase Two Environmental Site Assessments* under Ontario Regulation 153/04 (as amended), the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended), and standard industry practice.

2.1 BOREHOLE DAY-LIGHTING AND DRILLING

Veolia ES Canada Services Inc. was retained by Parsons to daylight and advance the boreholes. The boreholes were daylighted on May 31, 2012 to a depth of 2.4 m below ground surface (mbgs) using a vacuum excavator.

George Downing Estate Drilling Inc. was retained by Parsons to further advance the boreholes using a CME 75 truck-mounted drill rig, equipped with hollow stem augers, on May 31, 2012.

The borehole locations are shown on Drawing No. 2. The borehole was advanced to a maximum depth of 6.1 mbgs.

2.2 MONITORING WELL INSTALLATION

A monitoring well, consisting of a 51 mm diameter polyvinyl chloride (PVC) 10 slot screen, measuring approximately 3.0 m in length, and an un-slotted riser, was installed in each borehole. The annular space between the PVC well and the borehole wall was backfilled to approximately 0.3 m above the top of the screen with #2 silica sand and then with hydrated bentonite pellets to approximately 0.1 mbgs. The monitoring well was then finished with a flush-mount casing set in concrete grout to protect the well from damage.

Following installation of the monitoring wells, the wells were developed by purging the water until it was observed to be reasonably free of turbidity or until the wells became dry.

Monitoring well installation details are presented on the borehole logs in Appendix A and in Table 1. The MOE well record is presented in Appendix B.

2.3 SOIL SAMPLING

Soil sampling was conducted at regular depth intervals in the boreholes using a stainless steel spoon sampling device and a split-spoon sampler. The samples were collected from each device using a clean stainless steel trowel and nitrile gloves and placed in laboratory supplied jars. The

sampling devices were washed prior to collection of each soil sample. Specifically, any excess soil was brushed off prior to scrubbing the sampling devices with soapy water, rinsing with distilled water and allowing it to air dry. Each soil sample was immediately split and one portion of the sample was sealed in a clean plastic bag for screening, which included determining textural description, visual evidence of impact (e.g., staining or free product), and measurement of the sample combustible headspace vapour concentration (soil vapour concentration). The remainder of the sample was promptly placed in containers supplied by the laboratory and stored in coolers with ice for possible analysis.

The soil samples submitted for analysis of BTEX, PHC fraction F1, and hexane were each collected in two 40 mL vials pre-charged with 10 mL of methanol. Approximately 5 g of soil was collected from the stainless steel spoon sampling device or split spoon sampler using a clean disposable syringe and nitrile gloves and placed in each methanol filled sampling vial. Samples for the remaining parameters were collected in either 60 mL or 120 mL glass jars with Teflon lined lids.

The soil vapour concentrations were measured using a Gastech Model 1238ME combustible gas detector having a minimum detection level of 5 parts per million by volume (ppmv). The gas detector was operated in the methane elimination mode.

The calibration of the Gastechtor was checked daily in the field. The procedure involved checking the instrument response against both a low [nominal 400 parts per million by volume] and high [nominal 43% lower explosive limit (% LEL)] concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument readings were within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if either of the readings was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field, until the instrument reads within ±10% for both gas standards.

Soil sampling details are presented on the borehole logs in Appendix A.

Typically two samples from each borehole were selected for laboratory analyses, based on sample location relative to the apparent water table, visual observations and/or field screening results. In general, one worst case soil sample, based on field screening results, and one deeper sample from the first apparent non-impacted zone, were submitted for laboratory analysis. The samples were stored in coolers with ice.

2.4 GROUNDWATER MONITORING AND SAMPLING

On June 14, 2012, all of the new and existing accessible wells were monitored for subsurface vapour concentrations, water levels, and the presence or absence of free product. The wells were generally monitored in order of least impacted to most impacted (based on soil field

screening results and previous soil and groundwater results). Monitoring well BH-104 could not be located and is assumed to be destroyed.

Immediately after removing the well caps, the maximum subsurface vapour concentrations in the wells were measured using a Gastechtor 1238ME combustible gas detector that was operated in methane elimination mode. This was done by inserting the collection tube of the gastechtor into the un-slotted riser pipes and recording the peak instrument readings.

The depth to the water table and presence or absence of free product in the wells were determined with a Heron H.OIL electronic interface probe that was cleaned with a solution of phosphate free detergent and water, then rinsed with distilled water, between monitoring wells.

If a measurable thickness of free product is observed in any well, Parsons protocol is not to collect a groundwater sample from that well. However, a groundwater sample is collected from a well if a petroleum hydrocarbon sheen is observed.

Groundwater samples were collected from all accessible monitoring wells on June 16, 2012. The wells were generally sampled in order of least impacted to most impacted (based on soil screening results and historical groundwater data). The wells were sampled using a low-flow purging methodology. Low-flow purging was completed using a variable-flow peristaltic pump to remove groundwater from the mid-point of the monitoring well screened zone. The pump was connected to a flow-through cell equipped with a multimeter that measured pH, temperature, electrical conductivity, dissolved oxygen (DO), reduction oxidation potential (REDOX), and turbidity. During low-flow purging the water level in the well was continually monitored, and the purging rate was adjusted such that the overall drawdown from the static groundwater level did not exceed approximately 10 cm. The purging rates ranged from 100 mL/min to 140 mL/min. The sample was collected when the pH, temperature, electrical conductivity, DO, REDOX and turbidity measurements generally stabilized as noted below, over three consecutive readings, taken at a minimum rate of every flow-through cell volume.

Temperature -	± 3%
pH -	± 0.1 pH Units
Electrical Conductivity -	± 3%
DO -	± 10%
REDOX -	± 10 mV
Turbidity -	± 10%

The pump and flow-through cell were connected to the wells with polyethylene and silicone tubing that were individually dedicated to each monitoring well. All groundwater samples were collected using the dedicated tubing.

Samples for analysis of BTEX, PHC fraction F1, and hexane were collected in 40 mL clear glass vials (with zero headspace), pre-charged with sodium bisulphate preservative. Samples for analysis of PHC fractions F2 to F4 were collected in 500 mL amber glass bottles pre-charged with sodium bisulphate. Samples for analysis of PHC fraction F4 gravimetric were collected in 1 L amber glass bottles pre-charged with hydrochloric acid preservative. Samples for analysis of lead were field filtered using 0.45 µm groundwater filters and collected in 250 mL HDPE plastic bottles pre-charged with nitric acid preservative. All sample bottles were supplied by the laboratory. The groundwater samples were placed in coolers with ice immediately after they were collected.

2.5 SURVEYING

On June 14, 2012 all of the monitoring wells were surveyed vertically relative to an arbitrary benchmark. The assigned elevation of the benchmark was 88.79 m. The benchmark location is shown on Drawing No. 3 and described in Table 1.

2.6 QUALITY ASSURANCE AND QUALITY CONTROL

A quality assurance and quality control (QA/QC) program was implemented to reduce and quantify potential issues introduced during sample collection, handling, shipping and analysis. The program included, but was not limited to using dedicated sampling equipment, using sample specific identification and labelling procedures, and using chain of custody records.

Field soil QA/QC samples consisted of one field duplicate samples for analysis of the following: BTEX, PHC fractions F1 to F4, hexane, and lead. In addition, one field blank methanol sample for analysis of BTEX, PHC F1, and hexane was submitted to the laboratory.

Field groundwater QA/QC samples submitted to the laboratory included one field duplicate, one field blank and one trip blank for analysis of BTEX, PHC fractions F1 to F4, hexane, and lead.

2.7 LABORATORY ANALYSES

The soil and groundwater samples collected from the boreholes were submitted for laboratory analyses of the following parameters: BTEX; PHC fractions F1 to F4; hexane; and lead. A total of four soil samples and five groundwater samples, excluding QA/QC samples, were submitted for analysis.

Selected soil samples were also submitted for grain size distribution analysis and pH to facilitate selection of applicable MOE site condition standards.

The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam is accredited by the Standards Council of Canada. Analytical methods used by the laboratory are referenced in the certificates of analysis presented in Appendix C. Analytical

procedures were conducted in accordance with the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended).

Note, the soil sample for grain size distribution analysis was submitted to Alston Associates Inc. Analytical methods used by Alston Associates are referenced in the grain size distribution report presented in Appendix D.

3.0 FINDINGS

3.1 FIELD OBSERVATIONS

3.1.1 STRATIGRAPHY

The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of gravel or sand fill to depths of up to 1.5 mbgs; silt to depths of up to 5.0 mbgs; and sand to the maximum depth of assessment of 6.1 mbgs. Detailed stratigraphic descriptions are presented on the borehole logs in Appendix A.

3.1.2 VAPOUR CONCENTRATIONS

Soil vapour concentrations measured in the samples recovered from the boreholes are presented on the logs in Appendix A. The soil vapour concentrations ranged from not detected (<5 ppmv) to 75 ppmv.

Subsurface vapour concentrations measured in the monitoring wells on June 14, 2012 are presented in Table 1. As indicated, the subsurface vapour concentrations ranged from 160 ppmv to 27% LEL.

3.1.3 GROUNDWATER

On June 14, 2012, the depth to groundwater ranged from 4.47 mbgs to 5.30 mbgs. The groundwater depths and the calculated potentiometric elevations are presented in Table 1.

The groundwater potentiometric surface elevations are presented on Drawing No. 3. As indicated, the inferred principal direction of groundwater flow was to the northwest.

3.1.4 FREE PRODUCT

As indicated in Table 1, measurable free product or a petroleum hydrocarbon sheen (i.e. <1mm) was not detected in any monitoring well.

3.2 SELECTED SITE CONDITION STANDARDS

For this Site, the approach to use the amended (2011) Ontario Regulation 153/04 generic site condition standards was selected. The rationale for selection of the applicable MOE 2011 standards is described below and based on information that is detailed in this or other sections of the report.

3.2.1 SITE SENSITIVITY

The Site would not be considered environmentally sensitive, based on the following:

- No part of the Site is on or within 30 m of an area of natural significance;
- pH values for surface soil samples were not less than 5 or greater than 9; and
- pH values for subsurface soil samples were not less than 5 or greater than 11.

3.2.2 GROUNDWATER CONDITION

The groundwater condition is non-potable based on the following:

- The Site and all properties within 250 m of the Site boundaries are supplied by a municipal water supply system.
- The Site is not in a municipally designated groundwater protection area.

3.2.3 SHALLOW SOIL PROPERTY

The Site would not be considered a shallow soil property, based on the following:

- The available borehole logs and geologic records indicate that less than one-third of the area of the Site consists of soil equal to or less than 2 m in depth beneath the soil surface, excluding any non-soil surface treatment.

3.2.4 NEARBY WATER BODY

A water body, in whole or in part, is not on the Site or within 30 m of the Site boundaries.

3.2.5 SOIL TEXTURE

The applicable soil texture for the Site is based on the following:

- Woodroffe Avenue: Medium to fine textured soils, as determined by the borehole logs, geological maps and the current grain size analyses, which collectively indicated

that more than two-thirds of the soil at the property, measured by volume, consisted of more than 50 percent of particles that are smaller than 75 µm in diameter.

- Medhurst Drive: Coarse textured soils, as determined by the borehole logs, geological maps and the historical grain size analyses, which collectively indicated that at least one-third of the soil at the property, measured by volume, consisted of more than 50 percent of particles that are larger than 75 µm in diameter.

3.2.6 PROPERTY USE

The applicable property use is as follows:

- Industrial/commercial/community property use, as the current zoning of the adjacent Esso retail fuel outlet is commercial.

3.2.7 FULL DEPTH OR STRATIFIED SITE CONDITION STANDARDS

The option to use the full depth, rather than the stratified, generic site condition standards was selected.

3.2.8 SELECTED SITE CONDITION STANDARDS

Based on the above discussion, the following site condition standards were selected for application at the Site:

- Woodroffe Avenue: Full depth generic site condition standards in a non-potable groundwater condition (MOE 2011 Table 3) for industrial/commercial/community property use and medium and fine textured soils.

- Medhurst Drive: Full depth generic site condition standards in a non-potable groundwater condition (MOE 2011 Table 3) for industrial/commercial/community property use and coarse textured soils.

3.3 SOIL ANALYTICAL RESULTS

The soil analytical results for BTEX, PHC fractions F1 to F4, hexane, and lead are presented and compared to the applicable MOE Table 3 standards in Table 2 and shown on Drawing No. 4. As indicated, all of the results satisfied the applicable standards.

The soil analytical results for pH are presented and compared to the applicable MOE Table 3 standards in Table 3. As indicated all of the results satisfied the applicable standards.

The soil grain size distribution results are presented in Appendix D. As indicated both samples were medium and fine textured.

3.4 GROUNDWATER ANALYTICAL RESULTS

The groundwater analytical results for BTEX, PHC fractions F1 to F4, hexane, and lead are presented and compared to the applicable MOE Table 3 standards in Table 4 and are shown on Drawings No. 5 and 6. As indicated, the groundwater analytical results satisfied the applicable standards for petroleum hydrocarbon parameters and lead in all of the wells that were sampled with the exception of xylenes and PHC fractions F1 and F2 in BH101. In addition, the hexane concentration in BH101 was not detected but elevated above the standard.

3.5 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

The results of the laboratory QA/QC analyses are presented in the laboratory certificates of analysis in Appendix C. The analyses included instrument and extraction surrogate recoveries, method blanks, matrix duplicates, matrix spikes, and laboratory control samples. No lab QA/QC issues were identified that call into question the reliability of the lab data reported.

The results of the field QA/QC sample analysis are presented in the tables in Appendix E. The samples included trip blank, field blank and field duplicate samples. No field QA/QC issues were identified that call into question the reliability of the lab data reported.

The laboratory and field QA/QC discussions are presented in Appendix E. In summary, no QA/QC issues were identified that would materially affect the overall conclusions for the subsurface investigation results presented in this report.

4.0 SUMMARY AND CONCLUSIONS

During this subsurface investigation, two boreholes were advanced and monitoring wells were installed in each borehole. Soil and groundwater samples were submitted for laboratory analysis of the following parameters: BTEX, PHC fractions F1 to F4, hexane, and lead.

The results of the investigation are summarized as follows:

1. The stratigraphic profile encountered in the boreholes with increasing depth generally consisted of gravel or sand fill to depths of up to 1.5 mbgs; silt to depths of up to 5.0 mbgs; and sand to the maximum depth of assessment of 6.1 mbgs.

2. The depth to groundwater ranged from 4.47 mbgs to 5.30 mbgs. The inferred principal direction of groundwater flow was to the northwest.

3. Free product was not detected during monitoring of the wells.

4. The MOE (2011) Table 3 (non-potable) site condition standards for medium and fine textured soils and industrial/commercial/community property use were selected for comparison with the soil and groundwater analytical results for Woodroffe Avenue and coarse textured soils for the groundwater samples for Medhurst Drive.

5. All soil sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, hexane and lead.

6. All groundwater sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, hexane and lead with the exception of xylenes and PHC fractions F1 and F2 in BH101. In addition, the hexane concentration was not detected but elevated above the standard.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc., a Parsons Company for Imperial Oil. It is intended for the sole and exclusive use of Imperial Oil, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and O'Connor Associates make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed

which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates. Nothing in this report is intended to constitute or provide a legal opinion.

We trust the foregoing information is satisfactory for your requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

O'CONNOR ASSOCIATES ENVIRONMENTAL INC., A PARSONS COMPANY

Nancy Hazell, B.Sc.

Gerry Parrott, P.Geo.

NLH:sn

W:\8000-999\8518#00\8518#02\8518T0212.R02(P2)f.docx

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH101	88.19	88.27	4.0 - 6.1	2010/03/16	10%	ND	4.39	83.88
				2010/06/03	50	ND	4.41	83.87
				2010/07/23	10%	ND	4.50	83.77
				2010/11/17	10%	ND	4.41	83.86
				2011/06/27	20%	ND	4.21	84.06
				2011/10/31	25%	ND	4.55	83.72
	88.18			2012/06/14	11%	ND	4.62	83.65
BH102	88.08	88.22	3.5 - 5.5	2010/03/16	25%	ND	4.32	83.90
				2010/06/03	175	ND	4.35	83.87
				2010/07/23	5%	ND	4.44	83.78
				2010/11/17	150	ND	4.35	83.87
				2011/06/27	5%	ND	4.17	84.05
				2011/10/31	5%	ND	4.50	83.72
	88.08			2012/06/14	27%	ND	4.55	83.67
BH103	88.84	88.92	3.0 - 6.1	2010/11/17	175	ND	4.39	84.53
				2011/06/27	80	ND	4.28	84.64
				2011/10/31	110	ND	4.62	84.30
	88.22			2012/06/14	160	ND	5.30	83.62
BH104	88.77	88.85	3.0 - 6.0	2010/11/17	175	ND	4.48	84.37
				2011/06/27	NM	NM	NM	NM
				2011/10/31	NA	NA	NA	NA
				2012/06/14	NM	NM	NM	NM
BH-201	87.95	88.09	3.1 - 6.1	2012/06/14	220	ND	4.53	83.56
BH-202	87.89	88.00	2.1 - 5.2	2012/06/14	240	ND	4.47	83.54

1 - Relative to local benchmark (BH5 top of riser pipe) with an assigned elevation of 88.79 m. Note BH103, BH-201 and BH-202 were cut down and re-surveyed after the wells were monitored on June 14, 2012.
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75 g/cm^3
m - metres
mbgs - metres below ground surface
mm - millimetres
NA - Well not accessible
ND - Not detected
NM - Well not monitored
* - Water level above top of screen

TABLE 2

SOIL ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-201-3.1-3.7	BH-201-5.5-6.1	DUP-1 FIELD DUPLICATE BH-201-5.5-6.1	BH-202-1.2-1.8	BH-202-4.6-5.2	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B280927	B280927	B280927	B280927	B280927	
Maxxam Sample ID	NR1800	NR1801	NR1802	NR1803	NR1805	
Sample Depth (mbgs)	3.1-3.7	5.5-6.1	5.5-6.1	1.2-1.8	4.6-5.2	
Date Sampled (yyyy/mm/dd)	2012/05/31	2012/05/31	2012/05/31	2012/05/31	2012/05/31	
PARAMETERS						
Benzene	<0.020	<0.020	<0.020	<0.020	<0.020	0.4
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	78
Ethylbenzene	<0.020	<0.020	0.031	<0.020	<0.020	19
Total Xylenes	<0.040	<0.040	<0.040	<0.040	<0.040	30
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	<10	<10	<10	65
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	<10	<10	<10	250
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	25	<10	2500
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	<10	<10	<10	<10	6600
Hexane	<0.50	<0.50	<0.50	<0.50	<0.50	88
Lead	6.3	5.2	<5.0	10	7.6	120

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

mbgs - metres below ground surface

Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis

The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.

BOLD - Exceeds applicable standard

TABLE 3

SOIL ANALYTICAL RESULTS
pH

SAMPLE LOCATIONS	BH-201-0.6-1.2	BH-202-3.8-4.4	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B280927	B280927	
Maxxam Sample ID	NR1799	NR1804	
Sample Depth (mbgs)	0.6-1.2	3.8-4.4	
Date Sampled (yyyy/mm/dd)	2012/05/31	2012/05/31	
PARAMETERS			
pH	7.25	NA	5.0 to 9.0[b]
	NA	7.66	5.0 to 11.0[c]

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

b - For surface soil

c - For subsurface soil

"-" - Not analyzed

NA - Not applicable

mbgs - metres below ground surface

Results for pH are reported in Standard Units (SU)

BOLD - Exceeds applicable standard

TABLE 4

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-201	DUP-4 FIELD DUPLICATE BH-201	BH-202	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B289240	B289240	B289240	
Maxxam Sample ID	NV1427	NV1428	NV1429	
Date Sampled (yyyy/mm/dd)	2012/06/14	2012/06/14	2012/06/14	
PARAMETERS				
Benzene	<0.20	<0.20	0.57	430
Toluene	<0.20	<0.20	<0.20	18 000
Ethylbenzene	0.22	<0.20	<0.20	2300
Total Xylenes	<0.40	<0.40	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<25	<25	<25	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	<100	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	<100	<100	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	<100	<100	500
Hexane	<5.0	<5.0	<5.0	520
Lead	<0.50	<0.50	<0.50	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.

BOLD - Exceeds applicable standard

TABLE 4

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH101	BH102	BH103	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B289275	B289275	B289275	
Maxxam Sample ID	NV1594	NV1595	NV1596	
Date Sampled (yyyy/mm/dd)	2012/06/14	2012/06/14	2012/06/14	
PARAMETERS				
Benzene	15	<0.20	<0.20	44
Toluene	1900	<0.20	<0.20	18 000
Ethylbenzene	990	1.2	<0.20	2300
Total Xylenes	**6800**	0.49	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	**2700**	<25	<25	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	**1600**	<100	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	<100	<100	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	<100	<100	500
Hexane	<100	<5.0	<5.0	51
Lead	1.1	0.70	0.70	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, coarse textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

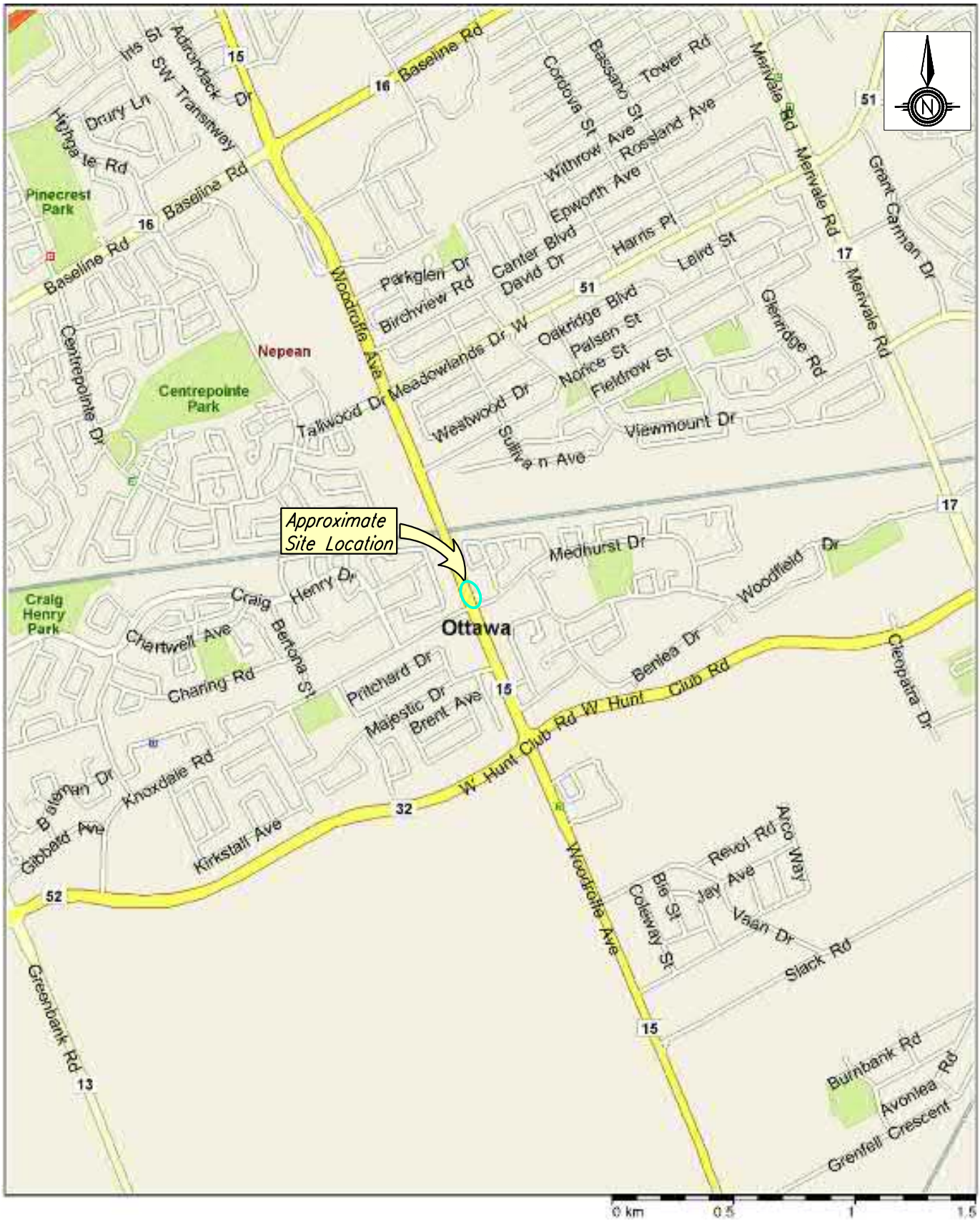
"-" - Not analyzed

* - Result from F4 gravimetric analysis

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.

BOLD - Exceeds applicable standard

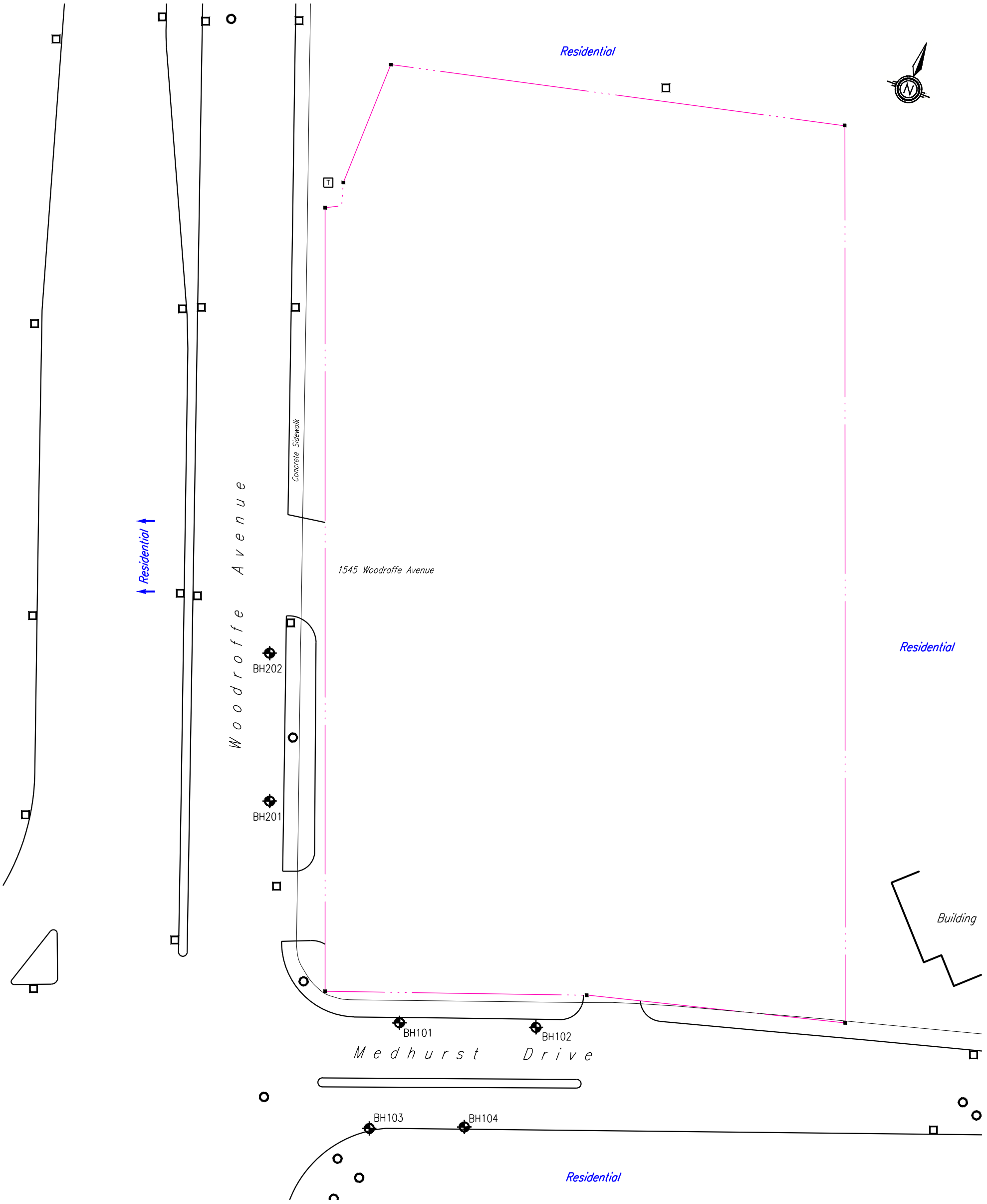


REFERENCE: Microsoft Streets and Trips, 2009.

Site Location Map

Imperial Oil
Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 8.5 x 11 in.	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518T108	Date: 2012/07/24
O'CONNOR ASSOCIATES		Drawing No.: 1



NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- Transformer (Pad Mounted)
- Monitoring Well
  BH101 to BH104 by O'Connor, 2010
  BH201 and BH202 by Parsons, 2012
- 2010/12/31 Date Format: yyyy/mm/dd

Utilities

- Catch Basin
- Manhole
- Utility Pole

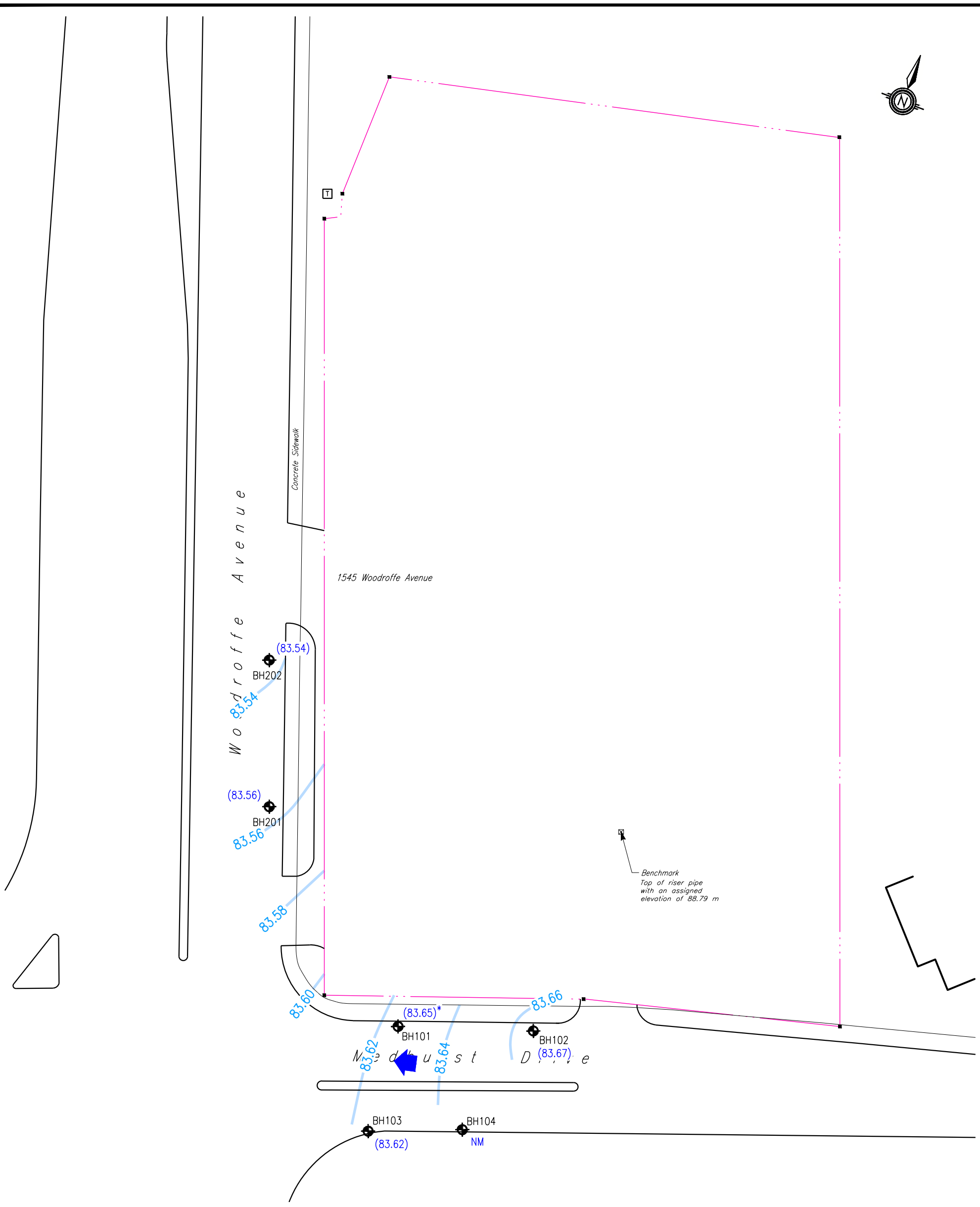
Site Plan

Imperial Oil

Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518S109	Date: 2012/07/27
PARSONS		Drawing No.: 2

Ref.: S-34-P



LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- Monitoring Well
  BH101 to BH104 by O'Connor, 2010
  BH201 and BH202 by Parsons, 2012
- 2010/12/31 — Date Format: yyyy/mm/dd
- Inferred Direction of Groundwater Flow
- 49.00 — Potentiometric Surface Contour with Elevation, metres
- (49.00) — Potentiometric Surface Elevation, metres
- (49.00)* — Value Not Used for Contouring
- NM — Well Not Monitored

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

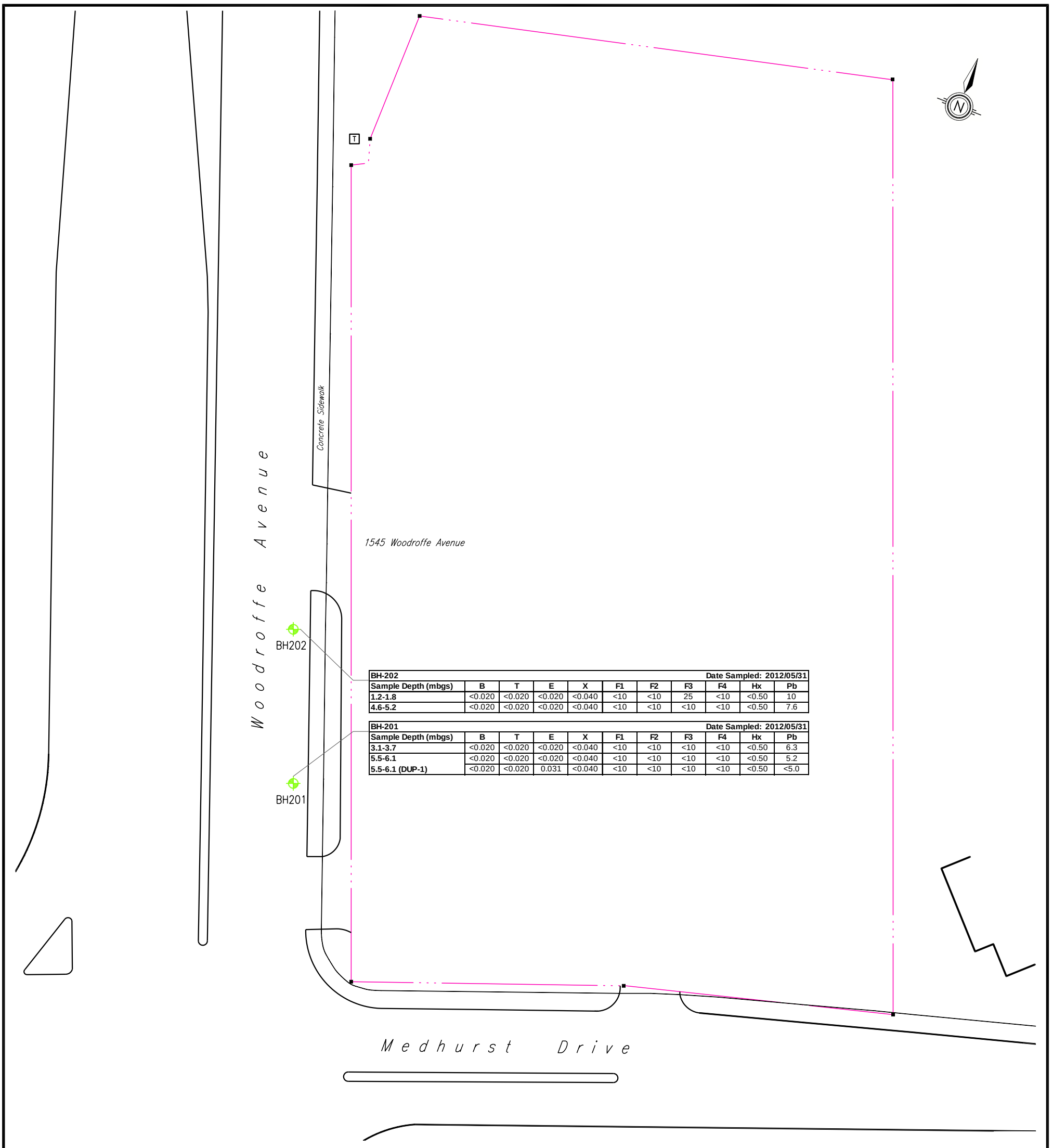
Elevation of the Groundwater Potentiometric Surface
2012/06/14

Imperial Oil

Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518M116	Date: 2012/07/27
PARSONS		Drawing No.: 3

Ref.: S-34-P



BH-202										Date Sampled: 2012/05/31
Sample Depth (mbgs)	**B**	**T**	**E**	**X**	**F1**	**F2**	**F3**	**F4**	**Hx**	**Pb**
1.2-1.8	<0.020	<0.020	<0.020	<0.040	<10	<10	25	<10	<0.50	10
4.6-5.2	<0.020	<0.020	<0.020	<0.040	<10	<10	<10	<10	<0.50	7.6

BH-201										Date Sampled: 2012/05/31
Sample Depth (mbgs)	**B**	**T**	**E**	**X**	**F1**	**F2**	**F3**	**F4**	**Hx**	**Pb**
3.1-3.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<10	<10	<0.50	6.3
5.5-6.1	<0.020	<0.020	<0.020	<0.040	<10	<10	<10	<10	<0.50	5.2
5.5-6.1 (DUP-1)	<0.020	<0.020	0.031	<0.040	<10	<10	<10	<10	<0.50	<5.0

LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- Monitoring Well
  BH201 and BH202 by Parsons, 2012
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/g — Micrograms Per Gram, dry weight basis

Analytical Results

- All Results Reported in µg/g
- Location Where All Soil Samples Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where At Least One Soil Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where No Soil Sample Submitted, Shown in Black
- **1234** — Exceedances of Standards, Shown in Red and Bold
- DUP — Field Duplicate Sample
- < — Result Less Than Reportable Detection Limit

Standards

Parameters	**B**	**T**	**E**	**X**	**F1**	**F2**	**F3**	**F4**	**Hx**	**Pb**
Standard* µg/g	0.4	78	19	30	65	250	2500	6600	88	120

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOE Table 3 (2011)** Industrial/commercial/community, fine and medium textured soils

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

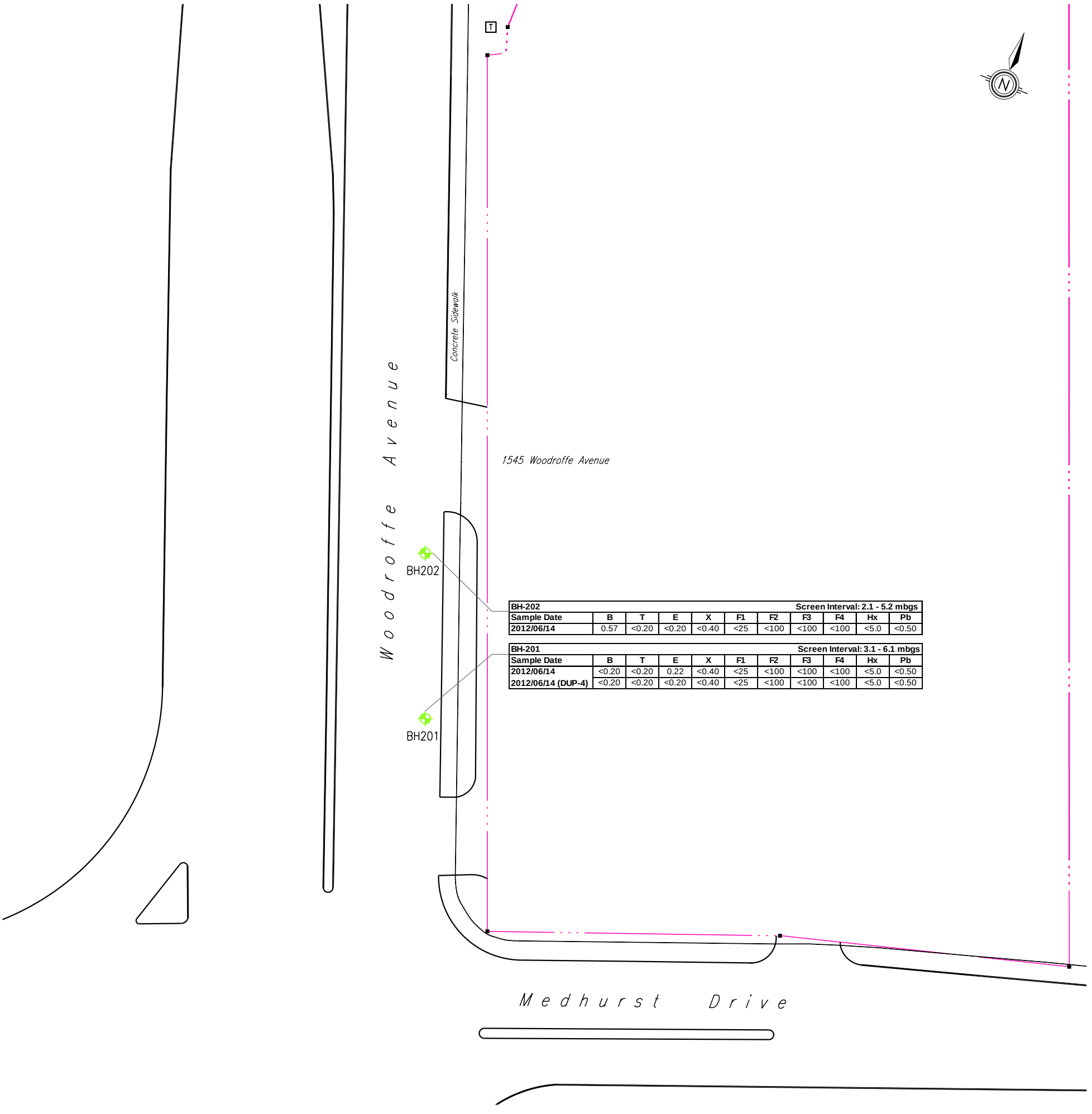
0 5 10 15 20 25m

Original Scale 1:500

Ref.: S-34-P

Soil Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead
Imperial Oil
Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518B110	Date: 2012/07/27
PARSONS		Drawing No.: 4



BH-202									Screen Interval: 2.1 - 5.2 mbgs	
Sample Date	**B**	**T**	**E**	**X**	**F1**	**F2**	**F3**	**F4**	**Hx**	**Pb**
2012/06/14	0.57	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50

BH-201									Screen Interval: 3.1 - 6.1 mbgs	
Sample Date	**B**	**T**	**E**	**X**	**F1**	**F2**	**F3**	**F4**	**Hx**	**Pb**
2012/06/14	<0.20	<0.20	0.22	<0.40	<25	<100	<100	<100	<5.0	<0.50
2012/06/14 (DUP-4)	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50

LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- Monitoring Well
  BH201 and BH202 by Parsons, 2012
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/L — Micrograms Per Litre

Analytical Results

- All Results Reported in µg/L
- Location Where Most Recent Groundwater Sample Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where Most Recent Groundwater Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple
- **1234** — Exceedances of Standards, Shown in Red and Bold
- **1234, Sheen** — Free Product Apparent Thickness (in millimetres), or Sheen, Shown in Purple and Bold
- DUP — Field Duplicate Sample
- < — Result Less Than Reportable Detection Limit

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/L	430	18 000	2300	4200	750	150	500	500	520	25

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOE Table 3 (2011)** All types of property use, medium and fine textured soils.

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

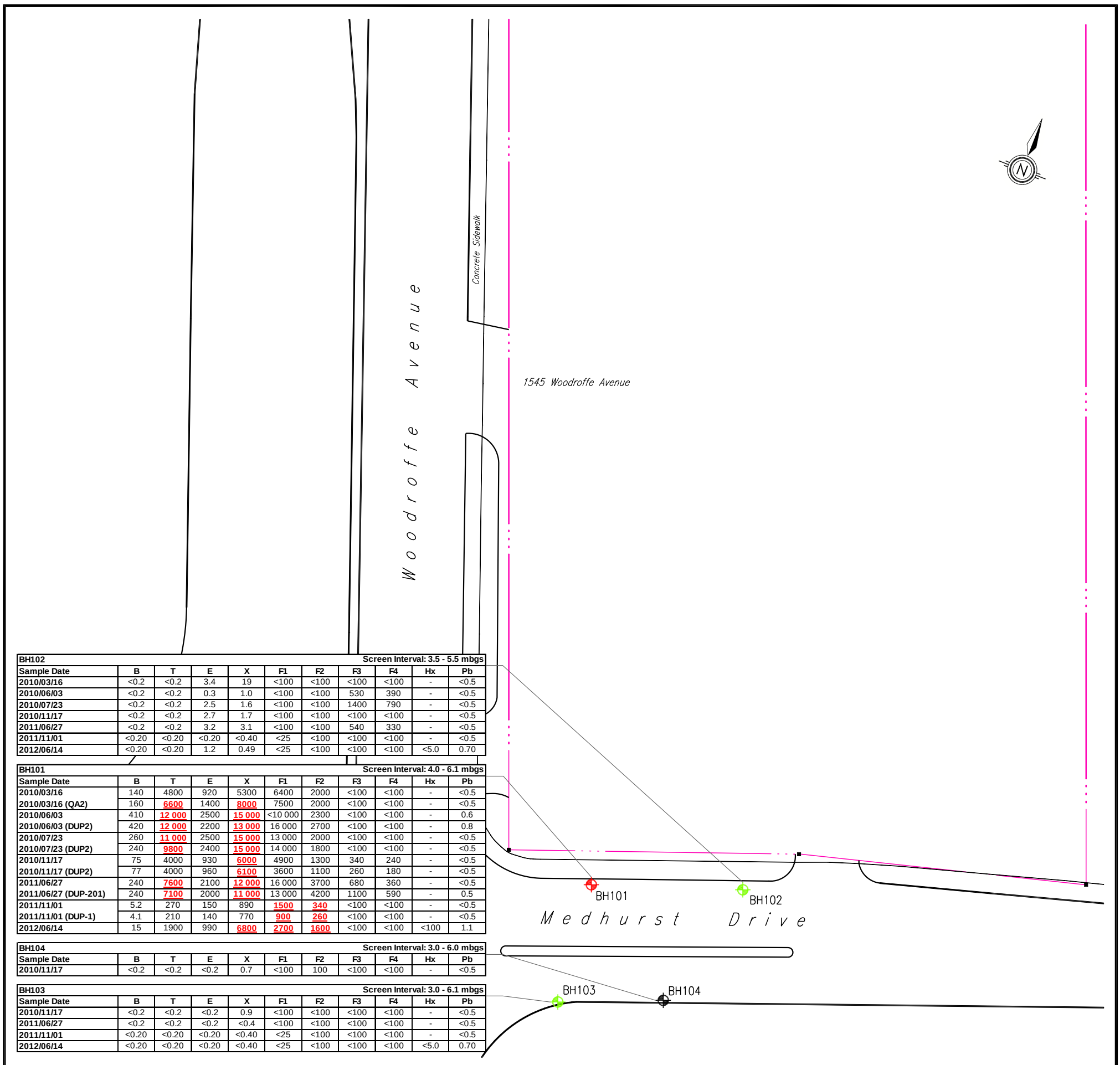
0 5 10 15 20 25m

Original Scale 1:500

Ref.: S-34-P

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead
Imperial Oil
Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518G112	Date: 2012/07/27
PARSONS		Drawing No.: 5



BH102 — Screen Interval: 3.5 - 5.5 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	<0.2	<0.2	3.4	19	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	<0.2	0.3	1.0	<100	<100	530	390	-	<0.5
2010/07/23	<0.2	<0.2	2.5	1.6	<100	<100	1400	790	-	<0.5
2010/11/17	<0.2	<0.2	2.7	1.7	<100	<100	<100	<100	-	<0.5
2011/06/27	<0.2	<0.2	3.2	3.1	<100	<100	540	330	-	<0.5
2011/11/01	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2012/06/14	<0.20	<0.20	1.2	0.49	<25	<100	<100	<100	<5.0	0.70

BH101 — Screen Interval: 4.0 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	140	4800	920	5300	6400	2000	<100	<100	-	<0.5
2010/03/16 (QA2)	160	**6600**	1400	**8000**	7500	2000	<100	<100	-	<0.5
2010/06/03	410	**12 000**	2500	**15 000**	<10 000	2300	<100	<100	-	0.6
2010/06/03 (DUP2)	420	**12 000**	2200	**13 000**	16 000	2700	<100	<100	-	0.8
2010/07/23	260	**11 000**	2500	**15 000**	13 000	2000	<100	<100	-	<0.5
2010/07/23 (DUP2)	240	**9800**	2400	**15 000**	14 000	1800	<100	<100	-	<0.5
2010/11/17	75	4000	930	**6000**	4900	1300	340	240	-	<0.5
2010/11/17 (DUP2)	77	4000	960	**6100**	3600	1100	260	180	-	<0.5
2011/06/27	240	**7600**	2100	**12 000**	16 000	3700	680	360	-	<0.5
2011/06/27 (DUP-201)	240	**7100**	2000	**11 000**	13 000	4200	1100	590	-	0.5
2011/11/01	5.2	270	150	890	**1500**	**340**	<100	<100	-	<0.5
2011/11/01 (DUP-1)	4.1	210	140	770	**900**	**260**	<100	<100	-	<0.5
2012/06/14	15	1900	990	**6800**	**2700**	**1600**	<100	<100	<100	1.1

BH104 — Screen Interval: 3.0 - 6.0 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/11/17	<0.2	<0.2	<0.2	0.7	<100	100	<100	<100	-	<0.5

BH103 — Screen Interval: 3.0 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/11/17	<0.2	<0.2	<0.2	0.9	<100	<100	<100	<100	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/11/01	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2012/06/14	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	0.70

LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- Monitoring Well
  BH101 to BH104 by O'Connor, 2010
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/L — Micrograms Per Litre

Analytical Results

All Results Reported in µg/L

- Location Where Most Recent Groundwater Sample Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where Most Recent Groundwater Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where No Groundwater Samples Were Submitted From the Most Recent Sampling Event, Shown in Black
- Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple
- **1234** — Exceedances of Standards, Shown in Red and Bold
- **1234, Sheen** — Free Product Apparent Thickness (in millimetres), or Sheen, Shown in Purple and Bold
- DUP — Field Duplicate Sample
- \- — Not Analyzed
- < — Result Less Than Reportable Detection Limit

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/L	1900	5900	28 000	5600	NS	NS	NS	NS	NS	32
Standard** µg/L	44	18 000	2300	4200	750	150	500	500	51	25

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOE Table 3 (2004)** All types of property use, coarse textured soils.
** **MOE Table 3 (2011)** All types of property use, coarse textured soils.
NS No standard

NOTE: All features are approximate.
REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m
Original Scale 1:500

Ref.: S-34-P

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead
Imperial Oil
Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518G111	Date: 2012/07/27
PARSONS		Drawing No.: 6

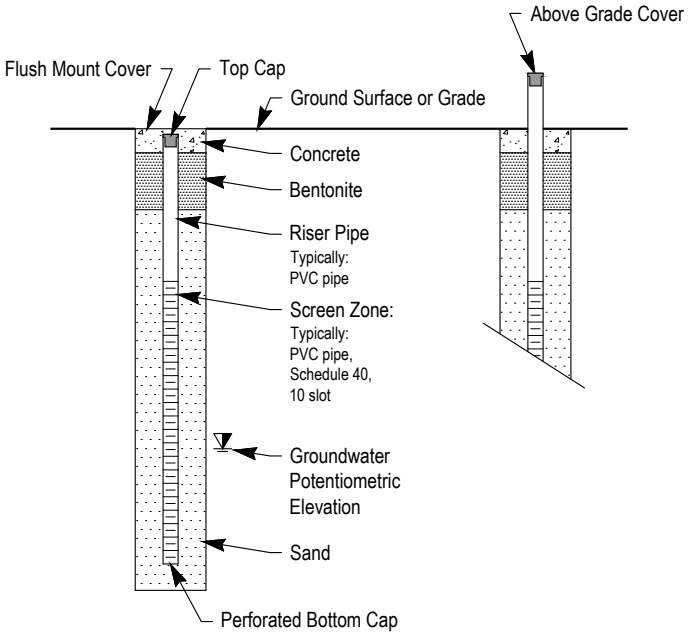
APPENDIX A

BOREHOLE LOGS

BOREHOLE LOG LEGEND

Overburden

Monitoring Well Details [a]



Backfill Legend

- Asphalt
- Concrete
- Bentonite
- Gravel
- Sand [b]
- Slough
- Drill Cuttings
- Grout

Notes

a A generalized representation to show the well construction depicted on logs. Refer to log for specific well construction and backfill details.

b #2 well pack silica sand

Sample Type

DC	Drill Cutting
G	Grab
SL	Sleeved Tube
SS	Split Spoon
ST	Shelby Tube
OS	Other

Grab Samples are obtained by a stainless steel spoon, side wall sampler, hand auger or other sampling tool.

'N' Value is determined from a Standard Penetration Test. R represents a blow count of 50 or greater for a drive distance of 150 mm or less.

Stratigraphy Legend

- Asphalt
- Boulders
- Cobbles
- Gravel
- Sand
- Silt
- Clay
- Topsoil
- Concrete
- Sandy Gravel
- Gravelly Sand
- Sandy Silt
- Sandy Clay
- Peat
- Other Constructed Layer
- Sand and Gravel
- Silty Sand
- Clayey Silt
- Silty Clay
- Organic Soil

Templates: 40, 41.

BOREHOLE LOG

PROJECT: Environmental Site Assessment	REF. NO: 10-8518T02	BOREHOLE NO: **BH-201**
LOCATION: Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 87.95 m	START DATE: 2012/05/31
CLIENT: Imperial Oil	GRADE ELEV.: 88.09 m	COMPLETION DATE: 2012/05/31
BENCHMARK: Top of riser pipe of BH5 ASSIGNED ELEVATION: 88.79 m (Refer to drawings)		PAGE 1 of 1

Depth (m) Water Level	STRATIGRAPHY	SYMBOL	SAMPLING: NUMBER	SAMPLE TYPE	'N' VALUE	RECOVERY %	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	GROUND SURFACE											0
	ASPHALT (Fill)											
	GRAVEL (Fill) - dark gray, sandy, trace cobbles, moist		1	G	-	-						
1	SAND (Fill) - yellowish brown, medium grained, some silt, trace gravel, damp		2	G	-	-	BH-201-0.6-1.2 / pH					
			3	G	-	-						5
2	SILT - gray, clayey, trace sand, damp		4	G	-	-	BH-201-1.8-2.4 / Grain size					
			5	SS	2	-						
3			6	SS	-	-	BH-201-3.1-3.7 / BTEX, PHC F1-F4, Hx, Pb					10
			7	SS	-	-						
4	SAND - light gray, coarse to medium grained, silty, damp											
	▼		8	SS	12	-				Groundwater Potentiometric Surface on 2012/06/14		15
5			9	SS	15	-				Monitoring Well Installed, 51 mm Dia. PVC Pipe, 10 Slot, Screened from 3.1 m to 6.1 m		
			10	SS	14	-	BH-201-5.5-6.1 (Dup-1) / BTEX, PHC F1-F4, Hx, Pb					
6	END OF BOREHOLE AT 6.1 m											20
	Borehole Daylighted to 2.4 m											
7												25
8												
9												30
10												

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: GasTech 1238ME
2012/05/31	0.00 m	406 mm	Hydro Vacuum Excavator; Hydro Vacuum Excavating	Veolia ES Canada Services Inc.	LOGGED: LC / REVIEW: NLH / DRAFTED: MLB
2012/05/31	2.40 m	406 mm	Case CME-75; Hollow Stem Auger	George Downing Estate Drilling Inc.	

PARSONS

8518T02 BH-16, BH-201 & BH-202.GPJ PE&I-CES REPORT LOG 41 PE&I-CDN DATA.GDT PE&I-CDN LIBRARY.GLB 30/7/2012

BOREHOLE LOG

PROJECT: Environmental Site Assessment	REF. NO: 10-8518T02	BOREHOLE NO: **BH-202**
LOCATION: Boulevard Adjacent to 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 87.89 m	START DATE: 2012/05/31
CLIENT: Imperial Oil	GRADE ELEV.: 88.00 m	COMPLETION DATE: 2012/05/31
BENCHMARK: Top of riser pipe of BH5 ASSIGNED ELEVATION: 88.79 m (Refer to drawings)		PAGE 1 of 1

Depth (m) Water Level	STRATIGRAPHY	SYMBOL	SAMPLING: NUMBER	SAMPLE TYPE	'N' VALUE	RECOVERY %	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	GROUND SURFACE											0
	ASPHALT (Fill)											
	GRAVEL (Fill) - dark gray, sandy, trace cobbles, moist		1	G	-	-						
1	SILT - gray, clayey, trace sand, damp		2	G	-	-	BH-202-0.6-1.2 / Grain size					5
			3	G	-	-	BH-202-1.2-1.8 / BTEX, PHC F1-F4, Hx, Pb					
2			4	G	-	-						
			5	SS	-	-						10
3			6	SS	-	-						
4			7	SS	-	-	BH-202-3.8-4.4 / pH					
▼										Groundwater Potentiometric Surface on 2012/06/14		15
5			8	SS	10	-	BH-202-4.6-5.2 / BTEX, PHC F1-F4, Hx, Pb			Monitoring Well Installed, 51 mm Dia. PVC Pipe, 10 Slot, Screened from 2.1 m to 5.2 m		
	SAND - light gray, coarse to medium grained, silty, trace gravel, wet											
	END OF BOREHOLE AT 5.2 m											
	Borehole Daylighted to 2.4 m											20
6												
7												25
8												
9												30
10												

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: GasTech 1238ME
2012/05/31	0.00 m	406 mm	Hydro Vacuum Excavator; Hydro Vacuum Excavating	Veolia ES Canada Services Inc.	LOGGED: LC / REVIEW: NLH / DRAFTED: MLB
2012/05/31	2.40 m	406 mm	Case CME-75; Hollow Stem Auger	George Downing Estate Drilling Inc.	

PARSONS

8518T02 BH-16, BH-201 & BH-202.GPJ PE&I-CES REPORT LOG 41 PE&I-CDN DATA.GDT PE&I-CDN LIBRARY GLB 30/7/2012

APPENDIX B

MOE WELL REGISTRATION RECORD

Ontario — Ministry of the Environment

Measurements recorded in: ☒ Metric ☐ Imperial

Well Tag No. *(Place Sticker and/or Print Below)* A122947 (BH-201)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	IOL IMPERIAL OIL LIMITED		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
90 WYNFORD AVENUE	TORONTO	ON	M3C1K5	4164417388

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
1545 WOODROFFE AVENUE			

County/District/Municipality	City/Town/Village	Province	Postal Code
	OTTAWA	Ontario	K2G1W2

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	441069	5020360		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Gray	Asphalt/gravel fill	trace cobble, sand	moist	0	0.5
yellow brown	Sand (fill)	some silt, trace gravel	medium grain, damp	0.5	1.5
gray	silt	trace sand, clay	damp, clayey	1.5	4.1
light gray	sand	silt	coarse to medium, damp	4.1	6.1

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	3.05 m	BENTONITE	0.057 m³

Method of Construction

☐ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☐ Air percussion ☒ Other, specify AUGER

Well Use

☐ Public ☐ Commercial ☐ Not used ☐ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☒ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
5.1	PVC	SCH 40	0	3.05

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
5.8	PVC	#10	3.05	6.1

Status of Well

☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☐ Abandoned, other, specify ☐ Other, specify

Water Details

Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

Well production (l/min / GPM)

Disinfected? ☐ Yes ☐ No

Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		60	

Map of Well Location

Please provide a map below following instructions on the back.

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
GEORGE DOWNING ESTATE DRILLING	1844

Business Address (Street Number/Name)	Municipality
410 RUE PRINCIPALE	GRENVILLE-SUR-LA-ROUGE

Province	Postal Code	Business E-mail Address
QC	J0V1B0	downing@hawk.igs.net

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
8192426469	STEPHEN DOWNING

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3216		2012 01 10

Well owner's information package delivered: ☐ Yes ☐ No

Date Package Delivered: M M D D Y Y Y Y

Date Work Completed: 2012 05 31

Ministry Use Only

Audit No. Z153927

Record

0506E (2007/12) © Queen's Printer for Ontario, 2007

Ministry's Copy

Ontario — Ministry of the Environment

Measurements recorded in: ☒ Metric ☐ Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: No TAG # (BH202)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	IOL IMPERIAL OIL LIMITED		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
90 WYNFORD AVENUE	TORONTO	ON	M3C K5	4164417388

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
1545 WOODROFF AVENUE			

County/District/Municipality	City/Town/Village	Province	Postal Code
	OTTAWA	Ontario	K2G1W2

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	441066	5020373		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
grey	Asphalt fill			0	.2
dark grey	gravel (fill)	trace cobble, sand	moist	.2	1
grey	silt	trace sand	clayey, damp	1	5
light grey	sand	silt, trace gravel	coarse to medium, wet, silty	5	5.2

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	3.45 m	BENTONITE	0.06 m³

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☒ Other, specify AUGER

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☑ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
5.1	PVC	sched 40	0	3.05

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
5.9	PVC	#10	3.05	5.2

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, specify
☐ Other, specify

Water Details

Water found at Depth (m/ft)	☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify
Water found at Depth (m/ft)	☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify
Water found at Depth (m/ft)	☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

Well production (l/min / GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

Comments

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
GEORGE DOWNING ESTATE DRILLING	1844

Business Address (Street Number/Name)	Municipality
410 RUE PRINCIPALE	GRENVILLE-SUR-LA-ROUGE

Province	Postal Code	Business E-mail Address
QC	J0V1B0	downing@hawk.igs.net

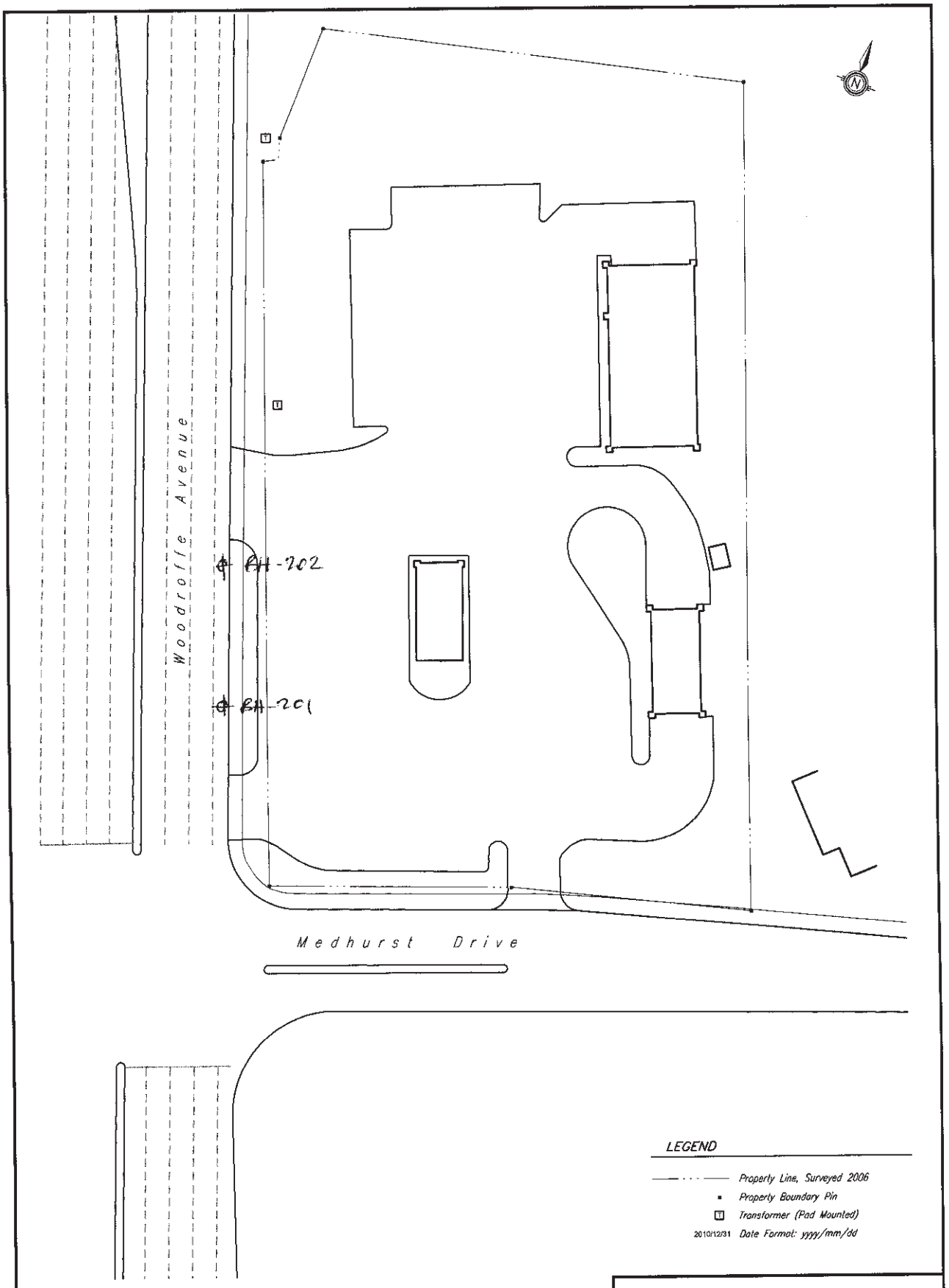
Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
8192426469	STEPHEN DOWNING

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3136		2012/10/10

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☐ Yes ☐ No		Audit No. Z153928
	Date Work Completed: 2012/05/31	

05088 (2007/12) © Queen's Printer for Ontario, 2007

Ministry's Copy



LEGEND

- *Property Line, Surveyed 2006*
- *Property Boundary Pin*
- *Transformer (Pad Mounted)*
- 2010/12/31 *Date Format: yyyy/mm/dd*

NOTE: All features are approximate.
REFERENCE: Clark Wilkinson Allan survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Site Plan

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: TFY	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: LC	File No.: 8518S103	Date: 2012/05/30
O'CONNOR ASSOCIATES		Drawing No.: -

Ref: S-34-P

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS – SOIL AND GROUNDWATER

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69377

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280927
Received: 2012/06/02, 09:30

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	5	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	5	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	5	CAM SOP-00408	SW-846 6010C
Moisture	5	CAM SOP-00445	R.Carter,1993
pH CaCl2 EXTRACT	2	CAM SOP-00413	SM 4500H+ B

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69377

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280927
Received: 2012/06/02, 09:30
within 24 hours unless otherwise flagged.

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

Encryption Key

Kudrat Cheema

08 Jun 2012 16:01:55 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B280927
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

LEAD IN SOIL (SOIL)

Maxxam ID		NR1800	NR1801	NR1802	NR1803		
Sampling Date		2012/05/31 10:45	2012/05/31 11:15	2012/05/31 11:15	2012/05/31 12:30		
COC Number		69377	69377	69377	69377		
	Units	**BH-201-3.1-3.7**	**BH-201-5.5-6.1**	**DUP-1**	**BH-202-1.2-1.8**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	6.3	5.2	<5.0	10	5.0	2871061

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		NR1805		
Sampling Date		2012/05/31 13:15		
COC Number		69377		
	Units	**BH-202-4.6-5.2**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	7.6	5.0	2871061

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280927
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN SOIL (SOIL)

Maxxam ID		NR1800	NR1800	NR1801	NR1802		
Sampling Date		2012/05/31 10:45	2012/05/31 10:45	2012/05/31 11:15	2012/05/31 11:15		
COC Number		69377	69377	69377	69377		
	Units	**BH-201-3.1-3.7**	**BH-201-3.1-3.7 Lab-Dup**	**BH-201-5.5-6.1**	**DUP-1**	**RDL**	**QC Batch**
Moisture	%	35		14	14	1.0	2870619
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	2873390
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	2873390
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	0.031	0.020	2873390
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	2873390
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	<0.040	0.040	2873390
Total Xylenes	ug/g	<0.040	<0.040	<0.040	<0.040	0.040	2873390
Hexane	ug/g	<0.50	<0.50	<0.50	<0.50	0.50	2873390
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2873390
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2873390
F2 (C10-C16 Hydrocarbons)	ug/g	<10		<10	<10	10	2871932
F3 (C16-C34 Hydrocarbons)	ug/g	<10		<10	<10	10	2871932
F4 (C34-C50 Hydrocarbons)	ug/g	<10		<10	<10	10	2871932
Reached Baseline at C50	ug/g	Yes		Yes	Yes		2871932
Extraction Surrogate Recovery (%)							
D10-Ethylbenzene	%	86	90	87	92		2873390
o-Terphenyl	%	96		102	100		2871932
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	108	111	109	116		2873390
4-Bromofluorobenzene	%	104	104	102	114		2873390
D4-1,2-Dichloroethane	%	101	106	103	120		2873390

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280927
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN SOIL (SOIL)

Maxxam ID		NR1803	NR1805		
Sampling Date		2012/05/31 12:30	2012/05/31 13:15		
COC Number		69377	69377		
	Units	**BH-202-1.2-1.8**	**BH-202-4.6-5.2**	**RDL**	**QC Batch**
Moisture	%	22	35	1.0	2870619
Benzene	ug/g	<0.020	<0.020	0.020	2873390
Toluene	ug/g	<0.020	<0.020	0.020	2873390
Ethylbenzene	ug/g	<0.020	<0.020	0.020	2873390
o-Xylene	ug/g	<0.020	<0.020	0.020	2873390
p+m-Xylene	ug/g	<0.040	<0.040	0.040	2873390
Total Xylenes	ug/g	<0.040	<0.040	0.040	2873390
Hexane	ug/g	<0.50	<0.50	0.50	2873390
F1 (C6-C10)	ug/g	<10	<10	10	2873390
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	2873390
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	2871932
F3 (C16-C34 Hydrocarbons)	ug/g	25	<10	10	2871932
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	2871932
Reached Baseline at C50	ug/g	Yes	Yes		2871932
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	89	92		2873390
o-Terphenyl	%	100	99		2871932
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	108	110		2873390
4-Bromofluorobenzene	%	105	106		2873390
D4-1,2-Dichloroethane	%	101	102		2873390

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280927
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

RESULTS OF ANALYSES OF SOIL

Maxxam ID		NR1799	NR1804	
Sampling Date		2012/05/31 10:30	2012/05/31 12:45	
COC Number		69377	69377	
	Units	**BH-201-0.6-1.2**	**BH-202-3.8-4.4**	**QC Batch**
Available (CaCl2) pH	pH	7.25	7.66	2873107

QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280927
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NR1799 **Collected** 2012/05/31
Sample ID BH-201-0.6-1.2 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
pH CaCl2 EXTRACT		2873107	2012/06/07	2012/06/07	XUANHONG QIU

Maxxam ID NR1800 **Collected** 2012/05/31
Sample ID BH-201-3.1-3.7 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/07	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam ID NR1800 Dup **Collected** 2012/05/31
Sample ID BH-201-3.1-3.7 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD

Maxxam ID NR1801 **Collected** 2012/05/31
Sample ID BH-201-5.5-6.1 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/07	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam ID NR1802 **Collected** 2012/05/31
Sample ID DUP-1 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/08	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/07	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam Job #: B280927
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NR1803 **Collected** 2012/05/31
Sample ID BH-202-1.2-1.8 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/07	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam ID NR1804 **Collected** 2012/05/31
Sample ID BH-202-3.8-4.4 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
pH CaCl2 EXTRACT		2873107	2012/06/07	2012/06/07	XUANHONG QIU

Maxxam ID NR1805 **Collected** 2012/05/31
Sample ID BH-202-4.6-5.2 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871932	2012/06/06	2012/06/08	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870619	N/A	2012/06/05	VALENTINA KAFTANI

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280927
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B280927

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2871061	SUK	Method Blank	Acid Extractable Lead (Pb)	2012/06/05	<5.0		ug/g	
2871932	DPO	Method Blank	o-Terphenyl	2012/06/07		102	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/07	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2012/06/07	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2012/06/07	<10		ug/g	
2873390	ABD	Method Blank	1,4-Difluorobenzene	2012/06/07		106	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		105	%	60 - 140
			D10-Ethylbenzene	2012/06/07		86	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		103	%	60 - 140
			Benzene	2012/06/07	<0.020		ug/g	
			Toluene	2012/06/07	<0.020		ug/g	
			Ethylbenzene	2012/06/07	<0.020		ug/g	
			o-Xylene	2012/06/07	<0.020		ug/g	
			p+m-Xylene	2012/06/07	<0.040		ug/g	
			Total Xylenes	2012/06/07	<0.040		ug/g	
			Hexane	2012/06/07	<0.50		ug/g	
			F1 (C6-C10)	2012/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2012/06/07	<10		ug/g	
		RPD [NR1800-03]	Benzene	2012/06/07	NC		%	50
			Toluene	2012/06/07	NC		%	50
			Ethylbenzene	2012/06/07	NC		%	50
			o-Xylene	2012/06/07	NC		%	50
			p+m-Xylene	2012/06/07	NC		%	50
			Total Xylenes	2012/06/07	NC		%	50
			Hexane	2012/06/07	NC		%	50
			F1 (C6-C10)	2012/06/07	NC		%	50
			F1 (C6-C10) - BTEX	2012/06/07	NC		%	50
		Matrix Spike [NR1801-03]						
			1,4-Difluorobenzene	2012/06/07		108	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		105	%	60 - 140
			D10-Ethylbenzene	2012/06/07		83	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		103	%	60 - 140
			Benzene	2012/06/07		96	%	60 - 140
			Toluene	2012/06/07		89	%	60 - 140
			Ethylbenzene	2012/06/07		104	%	60 - 140
			o-Xylene	2012/06/07		92	%	60 - 140
			p+m-Xylene	2012/06/07		85	%	60 - 140
			Hexane	2012/06/07		74	%	60 - 140
			F1 (C6-C10)	2012/06/07		64	%	60 - 140
2871061	SUK	LCS	Acid Extractable Lead (Pb)	2012/06/05		107	%	80 - 120
2871932	DPO	LCS	o-Terphenyl	2012/06/07		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/07		91	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/07		97	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/07		98	%	70 - 130
2873390	ABD	LCS	1,4-Difluorobenzene	2012/06/07		107	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		107	%	60 - 140
			D10-Ethylbenzene	2012/06/07		96	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		102	%	60 - 140
			Benzene	2012/06/07		108	%	60 - 140
			Toluene	2012/06/07		97	%	60 - 140
			Ethylbenzene	2012/06/07		116	%	60 - 140
			o-Xylene	2012/06/07		99	%	60 - 140
			p+m-Xylene	2012/06/07		104	%	60 - 140
			Hexane	2012/06/07		83	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE OTTAWA
Project #: 471491.01003

Quality Assurance Report (Continued)

Maxxam Job Number: B280927

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2873390	ABD	LCS	F1 (C6-C10)	2012/06/07		89	%	60 - 140

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.
LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B280927

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

CRISTINA CARRIERE, Scientific Services

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 69377

ANALYSIS REQUESTED

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Ukdge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7866	Ph: 613 742-1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: H7149.01003

FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (Hexane)	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)			
1 BH-201-0.6-1.2			X		1	12/05/31	10:30											X										X PH		
2 BH-201-3.1-3.7			X		4	12/05/31	10:45			X	X	X					X	X										X	For sample vacancy + insufficient #4 bottles Proceed with analysis as is.	
3 BH-201-5.5-6.1			X		4	12/05/31	11:15			X	X	X					X	X										X		
4 DUP-1			X		4	12/05/31	11:15			X	X	X					X	X										X		
5 BH-202-1.2-1.8			X		4	12/05/31	12:30			X	X	X					X	X										X		
6 BH-202-3.8-4.4			X		1	12/05/31	12:45											X										X		
7 BH-202-4.6-5.2			X		4	12/05/31	13:15			X	X	X					X	X										X		
8																															
9																															

IOL SITE LOCATION: Boulevard Adjacent to 1545 Wakefield Ave Ottawa
IOL SITE # (if applicable): 88001626
IOL PROJECT # (if applicable): P1995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1107092 7

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
(please indicate which Reg. version and if RSC required)
[ ] PWQO [ ] CCME [ ] OWS
[ ] Other _____

SPECIAL INSTRUCTIONS:
Test samples as per TOR
Due to sample headspace may be present. Proceed with analysts as is.
ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) [X]
Rush (3 days) [ ]
(2 days) [ ]
(1 day) [ ]
(same day) [ ]
Date Required

COOLER ID 1	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1 3.2 2 1.1 3 °C	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

LAB USE ONLY
MAXXAM JOB # B280927

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2012/06/01	12:00	1. DAVID CHAN	2012/06/02	09:30
2.			2.		
3.			3.		

SAMPLES
LABELED BY: DKN
VERIFIED BY: MAV

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/05/31

Location: *Boulevard Adjacent to 1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B280927*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Nicole Hottot* Data Reviewed by (Signature): N. Hottot

Review Date: *2012/06/15*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69374

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280942
Received: 2012/06/02, 09:30

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69374

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

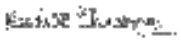
Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280942
Received: 2012/06/02, 09:30

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

Encryption Key



Kudrat Cheema
08 Jun 2012 15:20:25 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		NR1915		
Sampling Date		2012/05/31 17:00		
COC Number		69374		
	Units	**FIELD BLANK-1**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	0.020	2873390
Toluene	ug/g	<0.020	0.020	2873390
Ethylbenzene	ug/g	<0.020	0.020	2873390
o-Xylene	ug/g	<0.020	0.020	2873390
p+m-Xylene	ug/g	<0.040	0.040	2873390
Total Xylenes	ug/g	<0.040	0.040	2873390
Hexane	ug/g	<0.50	0.50	2873390
F1 (C6-C10)	ug/g	<10	10	2873390
F1 (C6-C10) - BTEX	ug/g	<10	10	2873390
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	88		2873390
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	105		2873390
4-Bromofluorobenzene	%	104		2873390
D4-1,2-Dichloroethane	%	104		2873390

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NR1915
Sample ID FIELD BLANK-1
Matrix Soil

Collected 2012/05/31
Shipped 2012/06/01
Received 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/08	ABDI MOHAMUD

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B280942

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2873390	ABD	Method Blank	1,4-Difluorobenzene	2012/06/07		106	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		105	%	60 - 140
			D10-Ethylbenzene	2012/06/07		86	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		103	%	60 - 140
			Benzene	2012/06/07	<0.020		ug/g	
			Toluene	2012/06/07	<0.020		ug/g	
			Ethylbenzene	2012/06/07	<0.020		ug/g	
			o-Xylene	2012/06/07	<0.020		ug/g	
			p+m-Xylene	2012/06/07	<0.040		ug/g	
			Total Xylenes	2012/06/07	<0.040		ug/g	
			Hexane	2012/06/07	<0.50		ug/g	
			F1 (C6-C10)	2012/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2012/06/07	<10		ug/g	
		LCS	1,4-Difluorobenzene	2012/06/07		107	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		107	%	60 - 140
			D10-Ethylbenzene	2012/06/07		96	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		102	%	60 - 140
			Benzene	2012/06/07		108	%	60 - 140
			Toluene	2012/06/07		97	%	60 - 140
			Ethylbenzene	2012/06/07		116	%	60 - 140
			o-Xylene	2012/06/07		99	%	60 - 140
			p+m-Xylene	2012/06/07		104	%	60 - 140
			Hexane	2012/06/07		83	%	60 - 140
			F1 (C6-C10)	2012/06/07		89	%	60 - 140

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B280942

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

Suzana Popovic

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

Page 1 of 1

C of C # 69374

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: ~~Nancy Hazell~~ LC Oconnor Associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: volorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (hexane)	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	FIELD BLANK-1				X	2	12/05/31	17:00			X	X																
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO ☐ ODWS 1/c/c medium/fine grained
☐ Other _____

SPECIAL INSTRUCTIONS: Test samples as per TDG

ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐

Date Required

COOLER ID 1	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 3/2/1°C (1 2 3)	PRESENT	✓		TEMP (1 2 3)	PRESENT			TEMP (1 2 3)	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. [signature] LAILA CHALATI	2012/06/01	12:00	1. [signature] DAVID CHAN	2012/06/02	09:30
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB #: B280942

SAMPLES
LABELED BY: DKN
VERIFIED BY: MAF

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/05/31

Location: *Boulevard Adjacent to 1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B280942*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Nicole Hottot* Data Reviewed by (Signature): N. Hottot

Review Date: *2012/06/15*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69727

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289240
Received: 2012/06/15, 13:08

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69727

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289240
Received: 2012/06/15, 13:08

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

Encryption Key

Kudrat Cheema

25 Jun 2012 10:48:35 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B289240
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

LEAD (DISSOLVED) IN WATER

Maxxam ID		NV1427	NV1428	NV1428	NV1429		
Sampling Date		2012/06/14 10:15	2012/06/14 10:15	2012/06/14 10:15	2012/06/14 11:00		
COC Number		69727	69727	69727	69727		
	Units	**BH-201**	**DUP-4**	**DUP-4 Lab-Dup**	**BH-202**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	2887165

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289240
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV1427	NV1428	NV1429		
Sampling Date		2012/06/14 10:15	2012/06/14 10:15	2012/06/14 11:00		
COC Number		69727	69727	69727		
	Units	**BH-201**	**DUP-4**	**BH-202**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.57	0.20	2887051
Toluene	ug/L	<0.20	<0.20	<0.20	0.20	2887051
Ethylbenzene	ug/L	0.22	<0.20	<0.20	0.20	2887051
o-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	2887051
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	2887051
Total Xylenes	ug/L	<0.40	<0.40	<0.40	0.40	2887051
Hexane	ug/L	<5.0	<5.0	<5.0	5.0	2887051
F1 (C6-C10)	ug/L	<25	<25	<25	25	2887051
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	25	2887051
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	100	2885641
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	<100	100	2885641
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	<100	100	2885641
Reached Baseline at C50	ug/L	Yes	Yes	Yes		2885641
Extraction Surrogate Recovery (%)						
o-Terphenyl	%	106	106	113		2885641
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	98	101	99		2887051
4-Bromofluorobenzene	%	92	95	95		2887051
D10-Ethylbenzene	%	94	95	96		2887051
D4-1,2-Dichloroethane	%	108	107	108		2887051

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289240
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NV1427 **Collected** 2012/06/14
Sample ID BH-201 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887051	N/A	2012/06/21	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/21	RAVINDER GAIDHU
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1428 **Collected** 2012/06/14
Sample ID DUP-4 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887051	N/A	2012/06/21	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/21	RAVINDER GAIDHU
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1428 Dup **Collected** 2012/06/14
Sample ID DUP-4 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1429 **Collected** 2012/06/14
Sample ID BH-202 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887051	N/A	2012/06/22	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/21	RAVINDER GAIDHU
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289240
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

Package 1	-0.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

SQC trend rule failure for Pb, Batch 2887165. 4 of 5 consecutive points greater than 1SD above the mean.
SQC Trend rule failure for Be, Batch 2887165. 7 consecutive points rising

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B289240

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2885641	RGA	Method Blank	o-Terphenyl	2012/06/20		111	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/20	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2012/06/20	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2012/06/20	<100		ug/L	
2887051	ABD	Method Blank	1,4-Difluorobenzene	2012/06/21		103	%	70 - 130
			4-Bromofluorobenzene	2012/06/21		90	%	70 - 130
			D10-Ethylbenzene	2012/06/21		88	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/21		115	%	70 - 130
			Benzene	2012/06/21	<0.20		ug/L	
			Toluene	2012/06/21	<0.20		ug/L	
			Ethylbenzene	2012/06/21	<0.20		ug/L	
			o-Xylene	2012/06/21	<0.20		ug/L	
			p+m-Xylene	2012/06/21	<0.40		ug/L	
			Total Xylenes	2012/06/21	<0.40		ug/L	
			Hexane	2012/06/21	<5.0		ug/L	
			F1 (C6-C10)	2012/06/21	<25		ug/L	
			F1 (C6-C10) - BTEX	2012/06/21	<25		ug/L	
2887165	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/21	<0.50		ug/L	
		RPD [NV1428-03]	Dissolved Lead (Pb)	2012/06/21	NC		%	20
		Matrix Spike [NV1428-03]	Dissolved Lead (Pb)	2012/06/21		101	%	80 - 120
2885641	RGA	LCS	o-Terphenyl	2012/06/20		111	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/20		96	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/20		108	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/20		102	%	70 - 130
2887051	ABD	LCS	1,4-Difluorobenzene	2012/06/21		101	%	70 - 130
			4-Bromofluorobenzene	2012/06/21		101	%	70 - 130
			D10-Ethylbenzene	2012/06/21		109	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/21		107	%	70 - 130
			Benzene	2012/06/21		123	%	70 - 130
			Toluene	2012/06/21		103	%	70 - 130
			Ethylbenzene	2012/06/21		116	%	70 - 130
			o-Xylene	2012/06/21		110	%	70 - 130
			p+m-Xylene	2012/06/21		99	%	70 - 130
			Hexane	2012/06/21		126	%	70 - 130
			F1 (C6-C10)	2012/06/21		88	%	70 - 130
2887165	HRE	LCS	Dissolved Lead (Pb)	2012/06/21		101	%	80 - 120

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.
LCS: A blank matrix sample 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.

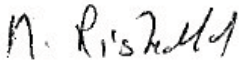
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

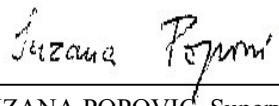
Maxxam Job #: B289240

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 69727

ANALYSIS REQUESTED

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: aconex associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy.hazell@aconex-associates.com
Ph: 416 441 7866	Ph: 613 7421781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491-01003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX, hexane	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH-201	X				8	12/06/14	10:15	X		X	X	X					X											
2	DUP-4	X				8	12/06/14	10:15	X		X	X	X					X											
3	BH-202	X				8	12/06/14	11:00	X		X	X	X					X											
4																													
5																													
6																													
7																													
8																													
9																													

IOL SITE LOCATION: Boulevard Adjacent to 1545 Woodroffe Ave Ottawa
IOL SITE # (if applicable): 87001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1107092 7

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
1/C/C ~~fine~~ medium fine grained
☐ PWQO ☐ ODWS
☐ Other

SPECIAL INSTRUCTIONS
test samples as per TDG
Due to the nature of samples headspace bubbles/sediment may be present. Proceed with analysis as is.
ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
1.	PRESENT	✓			PRESENT				PRESENT		
TEMP 0/0/-1°C	INTACT	✓		TEMP	INTACT			TEMP	INTACT		
1 2 3				1 2 3				1 2 3			

LAB USE ONLY
MAXXAM JOB # B289240

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2012/06/14	17:00	1. SHRUTI PATEL	2012/06/15	13:08
2.			2.		
3.			3.		

SAMPLES
LABELED BY: DKN
VERIFIED BY: ABH

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.*
Sampling Date: 2012/06/14

Boulevard Adjacent to 1545
Location: *Woodroffe Ave., Ottawa*
Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003*
Laboratory Job Number: *B289240*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*No*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):
Review Date: *2012/06/28*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69728

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289275
Received: 2012/06/15, 13:08

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69728

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

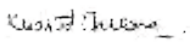
Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289275
Received: 2012/06/15, 13:08

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

Encryption Key



Kudrat Cheema

25 Jun 2012 10:46:57 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B289275
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

LEAD (DISSOLVED) IN WATER

Maxxam ID		NV1594	NV1595	NV1596		
Sampling Date		2012/06/14 14:45	2012/06/14 14:30	2012/06/14 13:15		
COC Number		69728	69728	69728		
	Units	**BH101**	**BH102**	**BH103**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	1.1	0.70	0.70	0.50	2887165

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289275
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV1594		NV1595	NV1595	NV1596		
Sampling Date		2012/06/14 14:45		2012/06/14 14:30	2012/06/14 14:30	2012/06/14 13:15		
COC Number		69728		69728	69728	69728		
	Units	**BH101**	**RDL**	**BH102**	**BH102 Lab-Dup**	**BH103**	**RDL**	**QC Batch**
Benzene	ug/L	15	4.0	<0.20		<0.20	0.20	2884305
Toluene	ug/L	1900	4.0	<0.20		<0.20	0.20	2884305
Ethylbenzene	ug/L	990	4.0	1.2		<0.20	0.20	2884305
o-Xylene	ug/L	1900	4.0	<0.20		<0.20	0.20	2884305
p+m-Xylene	ug/L	4900	8.0	0.49		<0.40	0.40	2884305
Total Xylenes	ug/L	6800	8.0	0.49		<0.40	0.40	2884305
Hexane	ug/L	<100	100	<5.0		<5.0	5.0	2884305
F1 (C6-C10)	ug/L	12000	500	<25		<25	25	2884305
F1 (C6-C10) - BTEX	ug/L	2700	500	<25		<25	25	2884305
F2 (C10-C16 Hydrocarbons)	ug/L	1600	100	<100	<100	<100	100	2886469
F3 (C16-C34 Hydrocarbons)	ug/L	<100	100	<100	<100	<100	100	2886469
F4 (C34-C50 Hydrocarbons)	ug/L	<100	100	<100	<100	<100	100	2886469
Reached Baseline at C50	ug/L	Yes		Yes	Yes	Yes		2886469
Extraction Surrogate Recovery (%)								
o-Terphenyl	%	119		118	111	121		2886469
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene	%	101		99		98		2884305
4-Bromofluorobenzene	%	100		96		99		2884305
D10-Ethylbenzene	%	108		104		112		2884305
D4-1,2-Dichloroethane	%	106		103		103		2884305

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289275
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV1596		
Sampling Date		2012/06/14 13:15		
COC Number		69728		
	Units	**BH103 Lab-Dup**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	0.20	2884305
Toluene	ug/L	<0.20	0.20	2884305
Ethylbenzene	ug/L	<0.20	0.20	2884305
o-Xylene	ug/L	<0.20	0.20	2884305
p+m-Xylene	ug/L	<0.40	0.40	2884305
Total Xylenes	ug/L	<0.40	0.40	2884305
Hexane	ug/L	<5.0	5.0	2884305
F1 (C6-C10)	ug/L	<25	25	2884305
F1 (C6-C10) - BTEX	ug/L	<25	25	2884305
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	100		2884305
4-Bromofluorobenzene	%	99		2884305
D10-Ethylbenzene	%	97		2884305
D4-1,2-Dichloroethane	%	103		2884305

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289275
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NV1594 **Collected** 2012/06/14
Sample ID BH101 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2884305	N/A	2012/06/19	SIMON XI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2886469	2012/06/20	2012/06/21	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1595 **Collected** 2012/06/14
Sample ID BH102 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2884305	N/A	2012/06/19	SIMON XI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2886469	2012/06/20	2012/06/21	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1595 Dup **Collected** 2012/06/14
Sample ID BH102 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2886469	2012/06/20	2012/06/21	NICOLETA CIUBLEA

Maxxam ID NV1596 **Collected** 2012/06/14
Sample ID BH103 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2884305	N/A	2012/06/19	SIMON XI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2886469	2012/06/20	2012/06/21	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1596 Dup **Collected** 2012/06/14
Sample ID BH103 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2884305	N/A	2012/06/19	SIMON XI

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289275
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

Package 1	-0.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

SQC trend rule failure for Pb, Batch 2887165. 4 of 5 consecutive points greater than 1SD above the mean.
SQC Trend rule failure for Be, Batch 2887165. 7 consecutive points rising

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B289275

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2884305	JXI	Method Blank	1,4-Difluorobenzene	2012/06/19		100	%	70 - 130
			4-Bromofluorobenzene	2012/06/19		97	%	70 - 130
			D10-Ethylbenzene	2012/06/19		100	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/19		104	%	70 - 130
			Benzene	2012/06/19	<0.20		ug/L	
			Toluene	2012/06/19	<0.20		ug/L	
			Ethylbenzene	2012/06/19	<0.20		ug/L	
			o-Xylene	2012/06/19	<0.20		ug/L	
			p+m-Xylene	2012/06/19	<0.40		ug/L	
			Total Xylenes	2012/06/19	<0.40		ug/L	
			Hexane	2012/06/19	<5.0		ug/L	
			F1 (C6-C10)	2012/06/19	<25		ug/L	
			F1 (C6-C10) - BTEX	2012/06/19	<25		ug/L	
2886469	NCI	Method Blank	o-Terphenyl	2012/06/20		122	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/20	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2012/06/20	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2012/06/20	<100		ug/L	
2887165	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/21	<0.50		ug/L	
2886469	NCI	RPD [NV1595-02]	F2 (C10-C16 Hydrocarbons)	2012/06/21	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2012/06/21	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2012/06/21	NC		%	30
2884305	JXI	RPD [NV1596-04]	Benzene	2012/06/19	NC		%	30
			Toluene	2012/06/19	NC		%	30
			Ethylbenzene	2012/06/19	NC		%	30
			o-Xylene	2012/06/19	NC		%	30
			p+m-Xylene	2012/06/19	NC		%	30
			Total Xylenes	2012/06/19	NC		%	30
			Hexane	2012/06/19	NC		%	30
			F1 (C6-C10)	2012/06/19	NC		%	30
			F1 (C6-C10) - BTEX	2012/06/19	NC		%	30
		Matrix Spike [NV1596-04]	1,4-Difluorobenzene	2012/06/19		99	%	70 - 130
			4-Bromofluorobenzene	2012/06/19		98	%	70 - 130
			D10-Ethylbenzene	2012/06/19		106	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/19		102	%	70 - 130
			Benzene	2012/06/19		118	%	70 - 130
			Toluene	2012/06/19		103	%	70 - 130
			Ethylbenzene	2012/06/19		110	%	70 - 130
			o-Xylene	2012/06/19		103	%	70 - 130
			p+m-Xylene	2012/06/19		100	%	70 - 130
			Hexane	2012/06/19		113	%	70 - 130
			F1 (C6-C10)	2012/06/19		91	%	70 - 130
2886469	NCI	Matrix Spike [NV1594-02]	o-Terphenyl	2012/06/21		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21		NC (1)	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/21		115	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/21		110	%	50 - 130
2884305	JXI	LCS	1,4-Difluorobenzene	2012/06/19		100	%	70 - 130
			4-Bromofluorobenzene	2012/06/19		100	%	70 - 130
			D10-Ethylbenzene	2012/06/19		107	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/19		103	%	70 - 130
			Benzene	2012/06/19		116	%	70 - 130
			Toluene	2012/06/19		103	%	70 - 130
			Ethylbenzene	2012/06/19		110	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;BOULEVARD ADJACENT TO 1545 WOODROFFE AVE, OTTAWA
Project #: 471491.01003

Quality Assurance Report (Continued)

Maxxam Job Number: B289275

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2884305	JXI	LCS	o-Xylene	2012/06/19		103	%	70 - 130
			p+m-Xylene	2012/06/19		101	%	70 - 130
			Hexane	2012/06/19		112	%	70 - 130
			F1 (C6-C10)	2012/06/19		101	%	70 - 130
2886469	NCI	LCS	o-Terphenyl	2012/06/21		118	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21		123	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/21		118	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/21		111	%	70 - 130
2887165	HRE	LCS	Dissolved Lead (Pb)	2012/06/21		101	%	80 - 120

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.
LCS: A blank matrix sample 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 (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B289275

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

BRAD NEWMAN, Scientific Specialist

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 69728

ANALYSIS REQUESTED

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Addres: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 46441 7866	Ph: 6137421781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 47149.01003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX Xylene	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE -	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH101	X				8	12/06/14	14:45	X		X	X	X					X										
2	BH102	X				8	12/06/14	14:30	X		X	X	X					X										
3	BH103	X				8	12/06/14	13:15	X		X	X	X					X										
4																												
5																												
6																												
7																												
8																												
9																												

IOL SITE LOCATION: Boulevard adjacent to 1545 Woodroffe Ave. Ottawa
IOL SITE # (if applicable): 83001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
(please indicate which Reg. version and if RSC required)
I/C/C coarse grained
[ ] PWQO [ ] ODWS
[ ] Other _____

SPECIAL INSTRUCTIONS: Test samples as per EDD Due to the nature of samples headspace bubbles & sediment maybe present. Proceed with analysis as is
ICE - YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) [X]
Rush (3 days) [ ]
(2 days) [ ]
(1 day) [ ]
(same day) [ ]
Date Required

COOLER ID 1	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP -1/0/-1°C 1 2 3	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

	RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1.	LAILA CHALATI	2012/06/14	17:00	1. Shruti SHRUTI PATEL	2012/06/15	13:08
2.				2.		
3.				3.		

LAB USE ONLY
MAXXAM JOB # B289275
SAMPLES
LABELED BY: DKN
VERIFIED BY: J-L

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.*
Sampling Date: 2012/06/14

Boulevard Adjacent to 1545
Location: *Woodroffe Ave., Ottawa*
Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003*
Laboratory Job Number: *B289275*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*No*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):
Review Date: *2012/06/28*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69376

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B290455
Received: 2012/06/19, 07:40

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69376

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/26

CERTIFICATE OF ANALYSIS

-2-

MAXXAM JOB #: B290455
Received: 2012/06/19, 07:40

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

Encryption Key

Kudrat Cheema

26 Jun 2012 11:27:17 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

LEAD (DISSOLVED) IN WATER

Maxxam ID		NV7680	NV7681		
Sampling Date		2012/06/15 12:00	2012/06/15 12:15		
COC Number		69376	69376		
	Units	**FIELD BLANK-2**	**TRIP BLANK-1**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	2888537

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV7680	NV7681		
Sampling Date		2012/06/15 12:00	2012/06/15 12:15		
COC Number		69376	69376		
	Units	**FIELD BLANK-2**	**TRIP BLANK-1**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	2888405
Toluene	ug/L	<0.20	<0.20	0.20	2888405
Ethylbenzene	ug/L	<0.20	<0.20	0.20	2888405
o-Xylene	ug/L	<0.20	<0.20	0.20	2888405
p+m-Xylene	ug/L	<0.40	<0.40	0.40	2888405
Total Xylenes	ug/L	<0.40	<0.40	0.40	2888405
Hexane	ug/L	<5.0	<5.0	5.0	2888405
F1 (C6-C10)	ug/L	<25	<25	25	2888405
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	2888405
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	2887710
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	2887710
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	2887710
Reached Baseline at C50	ug/L	Yes	Yes		2887710
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	116	115		2887710
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	102	102		2888405
4-Bromofluorobenzene	%	114	112		2888405
D10-Ethylbenzene	%	89	91		2888405
D4-1,2-Dichloroethane	%	109	108		2888405

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NV7680 **Collected** 2012/06/15
Sample ID FIELD BLANK-2 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2888405	N/A	2012/06/22	LINCOLN RAMDAHIN
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2888537	N/A	2012/06/22	HUA REN

Maxxam ID NV7681 **Collected** 2012/06/15
Sample ID TRIP BLANK-1 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2888405	N/A	2012/06/22	LINCOLN RAMDAHIN
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2888537	N/A	2012/06/22	HUA REN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	3.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B290455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887710	NCI	Method Blank	o-Terphenyl	2012/06/21		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2012/06/21	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2012/06/21	<100		ug/L	
2888405	LRA	Method Blank	1,4-Difluorobenzene	2012/06/22		102	%	70 - 130
			4-Bromofluorobenzene	2012/06/22		110	%	70 - 130
			D10-Ethylbenzene	2012/06/22		96	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/22		106	%	70 - 130
			Benzene	2012/06/22	<0.20		ug/L	
			Toluene	2012/06/22	<0.20		ug/L	
			Ethylbenzene	2012/06/22	<0.20		ug/L	
			o-Xylene	2012/06/22	<0.20		ug/L	
			p+m-Xylene	2012/06/22	<0.40		ug/L	
			Total Xylenes	2012/06/22	<0.40		ug/L	
			Hexane	2012/06/22	<5.0		ug/L	
			F1 (C6-C10)	2012/06/22	<25		ug/L	
			F1 (C6-C10) - BTEX	2012/06/22	<25		ug/L	
2888537	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/22	<0.50		ug/L	
2887710	NCI	LCS	o-Terphenyl	2012/06/21		117	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21		109	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/21		109	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/21		99	%	70 - 130
2888405	LRA	LCS	1,4-Difluorobenzene	2012/06/23		101	%	70 - 130
			4-Bromofluorobenzene	2012/06/23		112	%	70 - 130
			D10-Ethylbenzene	2012/06/23		108	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/23		113	%	70 - 130
			Benzene	2012/06/23		111	%	70 - 130
			Toluene	2012/06/23		99	%	70 - 130
			Ethylbenzene	2012/06/23		103	%	70 - 130
			o-Xylene	2012/06/23		99	%	70 - 130
			p+m-Xylene	2012/06/23		93	%	70 - 130
			Hexane	2012/06/23		98	%	70 - 130
			F1 (C6-C10)	2012/06/23		93	%	70 - 130
2888537	HRE	LCS	Dissolved Lead (Pb)	2012/06/22		94	%	80 - 120

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B290455

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

Page 1 of 1

C of C # 69376

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416441 7866	Ph: 6137421781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

	FIELD SAMPLE ID	MATRIX: ~~GROUND~~ WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (hexane)	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD (dissolved)	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	FIELD BLANK-2	X				8	12/06/15	12:00	X		X	X	X					X										
2	TRIP BLANK-1	X				5	12/06/15	12:15			X	X	X					X										
3																												
4																												
5																												
6																												
7																												
8																												
9																												

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa.

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO 1/c/c ~~to~~ med/fine grained ☐ ODWS
☐ Other _____

SPECIAL INSTRUCTIONS: Test samples as per TDG. Due to the nature of the samples headspace bubbles may be present proceed with analysis as is. ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 3/3/4°C (1 2 3)	PRESENT	✓		TEMP (1 2 3)	PRESENT			TEMP (1 2 3)	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. [signature] LAILA CHALATI	2012/06/15	17:00	1. [signature] ASAD BHAIDU	2012/06/19	07:40
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB # 8290455
SAMPLES
LABELED BY: RSO
VERIFIED BY: SEL

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/06/15

Location: *Boulevard Adjacent to 1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B290455*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2012/06/28*

Revision Date (if applicable): Revised by (Signature):

APPENDIX D

GRAIN SIZE DISTRIBUTION REPORT

alston associates inc.
consulting engineers

EMAIL

Email :	Nancy Hazell, O'Connor Associates Environmental (Ottawa office)	Email Address :	nancy-hazell@ oconnor-associates.com
From :	Jonathan Bond	Date :	6 June 2012
Ref. No. :	12-010	Page 1 of 6	
Subject :	Laboratory Testing O'Connor File 471491.01003 1545 Woodroffe, Ottawa, ON PO#LC-126714		

Enclosed are the Grain Size Distribution Test Reports for the samples received in our office on 4 June 2012. Please refer to Figures 1 and 2 attached. These analyses were carried out to classify the material according to the criteria in Ontario Regulation 153/04, Section 42.2 and were performed in general accordance with ASTM D422. Please note that the grain size curve and the material descriptions are based only on the material smaller than 2 mm (#10 sieve).

Our results are tabulated below.

Sample No.	Particles (by dry weight) (%)	Smaller/Larger than 75 μm	Material Classification	Particles in original sample greater than 2 mm (%)
BH-201-1.8-2.4	77	Smaller	Medium and Fine	2
BH-202-0.6-1.2	68	Smaller	Medium and Fine	3

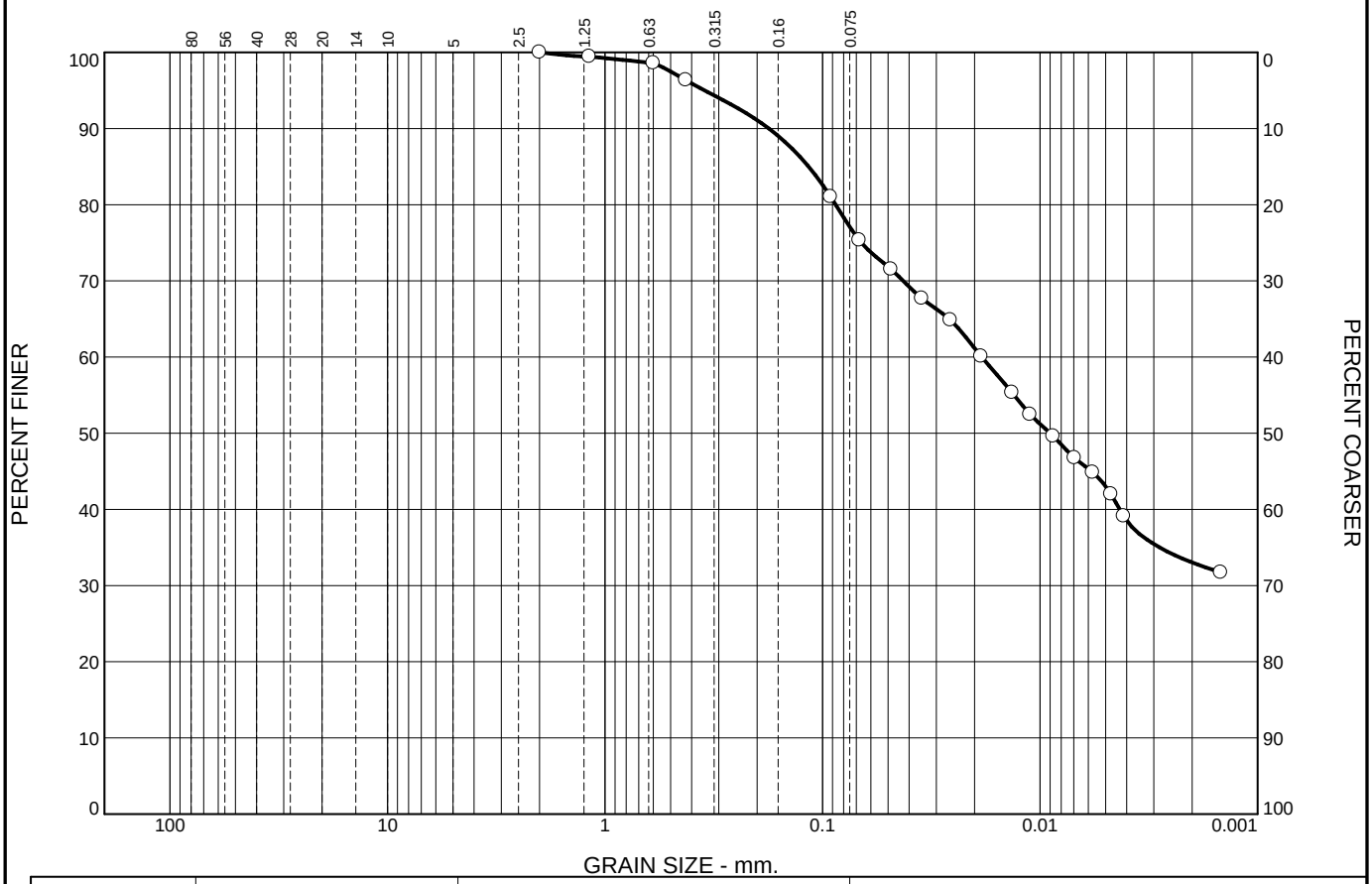
The full grain size plot for each sample (Figures 101 and 102) and the Chain of Custody record are also attached.

Regards.

85 citizen court, unit 1
markham, ontario
L6G 1A8

telephone (905) 474-5265
fax (905) 474-2825
e-mail alston.associates@alston.ca

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	4	19	44	33

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1160	0.0185	0.0090					

Material Description	USCS	AASHTO
○ SANDY CLAYEY SILT (SANDY SILTY CLAY)		

Project No. 12-010 **Client:** O'Connor Associates

Project: O'Connor File 471491.01003

1545 Woodroffe, Ottawa, ON

○ **Sample Number:** BH-201-1.8-2.4

alston associates inc.
consulting engineers

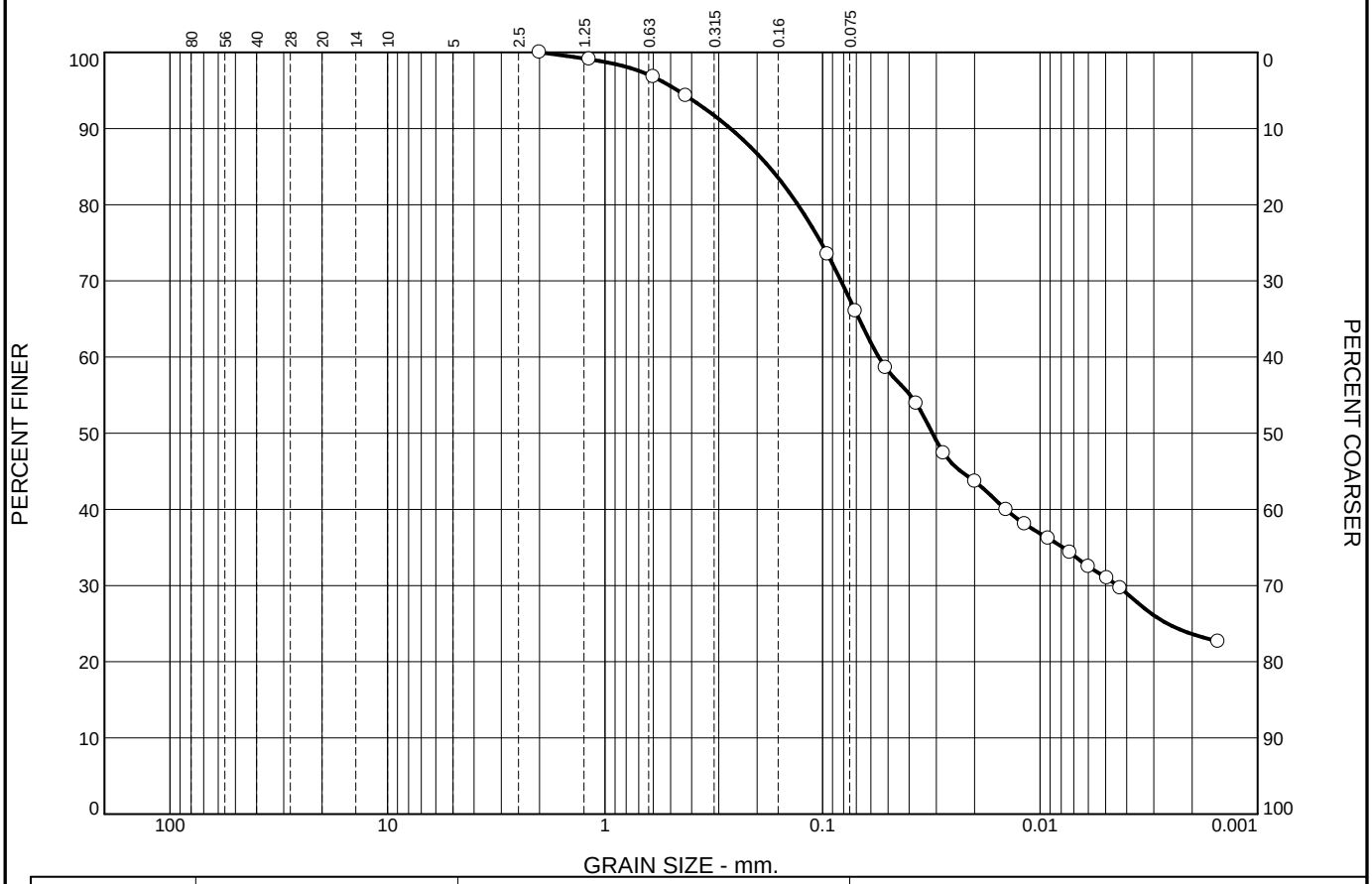
Remarks:

○O. Reg. 153 Grain Size Plot

Figure 1

Tested By: AM/RH **Checked By:** JB

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	6	26	44	24

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1766	0.0552	0.0313	0.0044				

Material Description	USCS	AASHTO
○ SANDY CLAYEY SILT (SANDY SILTY CLAY)		

Project No. 12-010 **Client:** O'Connor Associates

Project: O'Connor File 471491.01003

1545 Woodroffe, Ottawa, ON

○ **Sample Number:** BH-202-0.6-1.2

alston associates inc.
consulting engineers

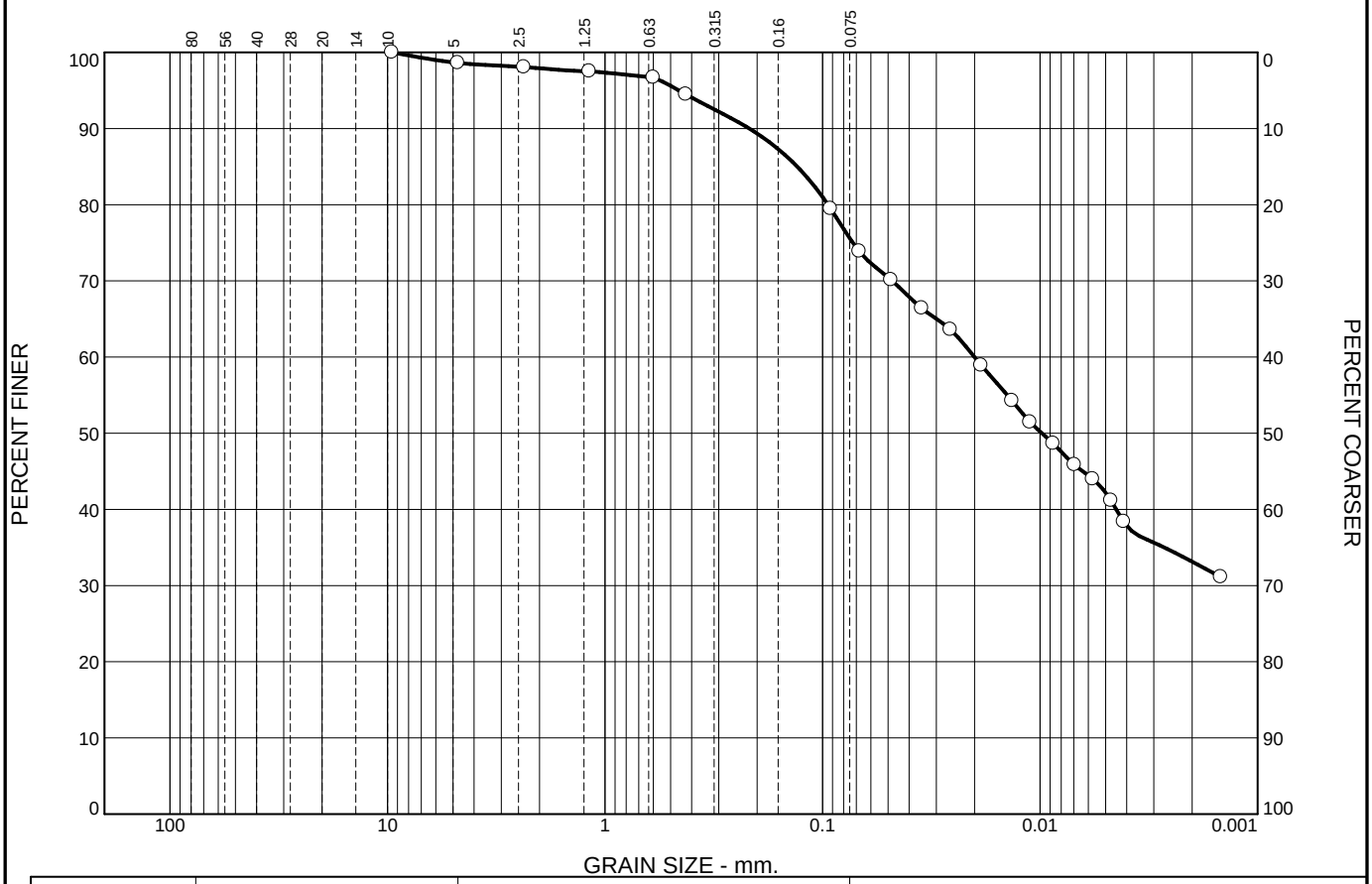
Remarks:

○O. Reg. 153 Grain Size Plot

Figure 2

Tested By: AR/RH **Checked By:** JB

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	1	1	4	18	43	33

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1308	0.0200	0.0098					

Material Description	USCS	AASHTO
○ SANDY CLAYEY SILT (SANDY SILTY CLAY)		

Project No. 12-010 **Client:** O'Connor Associates

Project: O'Connor File 471491.01003

1545 Woodroffe, Ottawa, ON

○ **Sample Number:** BH-201-1.8-2.4

alston associates inc.
consulting engineers

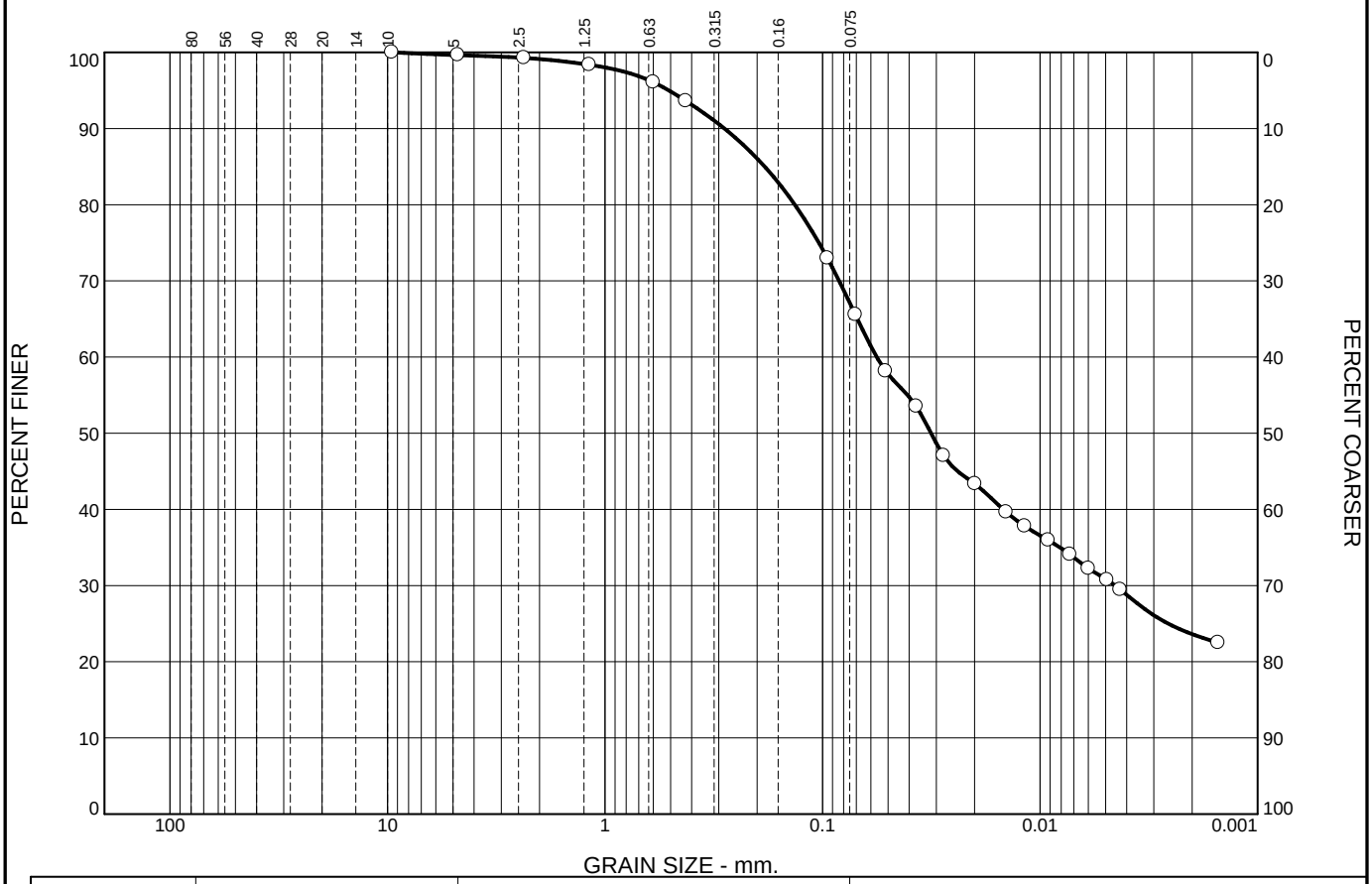
Remarks:

○Full Grain Size Plot

Figure 101

Tested By: AM/RH **Checked By:** JB

Grain Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	1	5	27	43	24

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1845	0.0564	0.0317	0.0045				

Material Description	USCS	AASHTO
○ SANDY CLAYEY SILT (SANDY SILTY CLAY)		

Project No. 12-010 **Client:** O'Connor Associates

Project: O'Connor File 471491.01003

1545 Woodroffe, Ottawa, ON

○ **Sample Number:** BH-202-0.6-1.2

alston associates inc.
consulting engineers

Remarks:

○Full Grain Size Plot

Figure 102

Tested By: AR/RH **Checked By:** JB

APPENDIX E

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

A summary of the lab and field QA/QC issues identified in this report are summarized in Table E-1.

The soil field QA/QC program consisted of one field duplicate sample for the analysis of BTEX, PHC fractions F1 to F4, hexane, and lead. In addition, one field blank methanol sample for analysis of BTEX, PHC fraction F1 and hexane.

The groundwater field QA/QC program consisted of one field duplicate, one field blank, and one trip blank for the analysis of BTEX, PHC fractions F1 to F4, hexane, and lead.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

The designated field duplicate RPD alert limits are presented in Table E-2 and E-4. Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit. As indicated, all of the RPDs were within acceptable limits.

The soil field blank data were compared to the alert limits and are presented in Table E-3. As indicated, all of the results were within the alert limits.

The water trip blank and field blank data were compared to the alert limits and are presented in Table E-5. As indicated, all of the results were within the alert limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for soil and/or groundwater samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. As indicated, no laboratory QA/QC issues were identified with the exceptions presented in Table E-1.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE E-1

FIELD AND LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL ISSUES

Maxxam Job #	Lab Sample ID	DQW Number	Sample Name	Matrix	Test Affected	Deviation	Interpretation
B289240	NV1427 NV1428 NV1429	N/A	BH-201 DUP-4 BH-202	Water	Metals	Trend rule failure for lead with 4 out of 5 consecutive points greater than 1 standard deviation above the mean.	There is a potential slight high bias; however the sample analytical results were significantly below the site condition standards (all non-detect). The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.
	NV1427 NV1428 NV1429	N/A	BH-201 DUP-4 BH-202	Water	Metals	Trend rule failure for beryllium with 7 consecutive points rising.	There is no potential bias; however, the sample analytical results were significantly below the site condition standards (all non-detect). The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.
B289275	NV1594 NV1595 NV1596	N/A	BH101 BH102 BH103	Water	Metals	Trend rule failure for lead with 4 out of 5 consecutive points greater than 1 standard deviation above the mean.	There is a potential slight high bias; however the sample analytical results were significantly below the site condition standards. The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.
	NV1594 NV1595 NV1596	N/A	BH101 BH102 BH103	Water	Metals	Trend rule failure for beryllium with 7 consecutive points rising.	There is no potential bias; however, the sample analytical results were significantly below the site condition standards. The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.

N/A – Not applicable

TABLE E-2

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-201-5.5-6.1	RDL	DUP-1 FIELD DUPLICATE BH-201-5.5-6.1	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B280927		B280927			
Maxxam Sample ID	NR1801		NR1802			
Depth (mbgs)	5.5-6.1		5.5-6.1			
Date Sampled (yyyy/mm/dd)	2012/05/31		2012/05/31			
PARAMETERS						
Benzene	<0.020	0.020	<0.020	0.020	NC	100
Toluene	<0.020	0.020	<0.020	0.020	NC	100
Ethylbenzene	<0.020	0.020	0.031	0.020	NC	100
Total Xylenes	<0.040	0.040	<0.040	0.040	NC	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	10	<10	10	NC	100
Hexane	<0.50	0.50	<0.50	0.50	NC	100
Lead	5.2	5.0	<5.0	5.0	NC	100

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds RPD alert limit

TABLE E-3

SOIL FIELD BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND HEXANE

SAMPLE LOCATIONS	RDL	FIELD BLANK-1	
Maxxam Certificate of Analysis No.		B280942	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		NR1915	
Date Sampled (yyyy/mm/dd)		2012/05/31	
PARAMETERS			
Benzene	0.020	<0.020	No
Toluene	0.020	<0.020	No
Ethylbenzene	0.020	<0.020	No
Total Xylenes	0.040	<0.040	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	10	<10	No
Hexane	0.50	<0.50	No

a - BTEX have been subtracted from the fraction.
RDL - Reportable detection limit
"-" - Not analyzed
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds alert limit
Note - Alert limits for field blanks are 1x RDL for BTEX, hexane and petroleum hydrocarbon fraction F1.

TABLE E-4

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-201	RDL	DUP-4 FIELD DUPLICATE BH-201	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B289240		B289240			
Maxxam Sample ID	NV1427		NV1428			
Date Sampled (yyyy/mm/dd)	2012/06/14		2012/06/14			
PARAMETERS						
Benzene	<0.20	0.20	<0.20	0.2	NC	80
Toluene	<0.20	0.20	<0.20	0.2	NC	80
Ethylbenzene	0.22	0.20	<0.20	0.2	NC	80
Total Xylenes	<0.40	0.40	<0.40	0.4	NC	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<25	25	<25	25	NC	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	100	<100	100	NC	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	100	<100	100	NC	80
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	100	<100	100	NC	80
Hexane	<5.0	5.0	<5.0	5.0	NC	80
Lead	<0.50	0.50	<0.50	0.50	NC	50

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds RPD alert limit

TABLE E-5

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	RDL	FIELD BLANK-2		TRIP BLANK-1	
Maxxam Certificate of Analysis No.		B290455	EXCEEDS ALERT LIMIT (yes/no)	B290455	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		NV7680		NV7681	
Date Sampled (yyyy/mm/dd)		2012/06/15		2012/06/15	
PARAMETERS					
Benzene	0.20	<0.20	No	<0.20	No
Toluene	0.20	<0.20	No	<0.20	No
Ethylbenzene	0.20	<0.20	No	<0.20	No
Total Xylenes	0.40	<0.40	No	<0.40	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	25	<25	No	<25	No
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	No	<100	No
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	100	<100	No	<100	No
Petroleum Hydrocarbons F4 (>C34 - C50)	100	<100	No	<100	No
Hexane	5.0	<5.0	No	<5.0	No
Lead	0.50	<0.50	No	<0.50	No

a - BTEX have been subtracted from the fraction.
b - Naphthalene has not been subtracted from the fraction.
c - PAHs have not been subtracted from the fraction.
RDL - Reportable detection limit
"-" - Not analyzed
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX, hexane and lead; 2x RDL for petroleum hydrocarbons fractions F1 to F4.

This document and the information contained therein are confidential property of Imperial Oil and any disclosure of same is governed by provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-83, c.111, Sch.II"1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch.I"1", as such legislation may be amended from time to time.

SUPPLEMENTARY PHASE II ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE
OTTAWA, ONTARIO

Submitted to:

Imperial Oil Limited
90 Wynford Drive
Toronto, Ontario M3C 1K5

Submitted by:

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.

3715 Laird Road, Suite 100
Mississauga, Ontario L5L 0A3
Phone: (905) 820-1210
Fax: (905) 820-1221

June 25, 2010

O'Connor Reference No.: 10-8518T02

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE.

SUMMARY

SITE	1545 Woodroffe Avenue, Ottawa, Ontario
Type of Facility	Esso Retail Fuel Outlet
Municipal Zoning	Main Parcel: GM15H(9.5) - General Mixed-Use zone, subzone 15, height restriction of 8 m Triangular parcel on the north side of the Site: RTDWW – Residential Third Density zone, subzone WW
Date(s) of Soil Sampling	March 1 to 3, 2010
Date(s) of Groundwater Sampling	March 16, 2010
Number of Test Pits Advanced	0
Number of Boreholes Drilled	5
Number of Wells Installed in Boreholes	5
Type of Organic Vapour Meter Used	Gastech 1238ME
Adjacent Land Use	Woodroffe Avenue to the west, Medhurst Avenue to the south, and residential to the east and north
Aquifer Usage in 100 m radius	None
Reference Standards	MOE Table 3 (non-potable) Site Condition Standards (medium and fine textured soils, industrial/commercial/community property use)

Description	**BH8**	**BH9**	**BH10**	**BH11**	**BH12**
Well Installed	Yes	Yes	Yes	Yes	Yes
Depth (mbgs)	6.1	7.6	6.1	6.1	6.1
Dominant Soil Type	Sand and/or gravel fill; silt; and sand	Sand and/or gravel fill; silt; and sand	Gravel fill; peat; silt; and sand	Sand and/or gravel fill; silt; and sand	Gravel fill; peat; silt; and sand
Depth to Water Table (mbgs)	5.14	5.23	DRY	4.70	4.97
Screened Interval (mbgs)	4.6 to 6.0	5.8 to 7.3	1.5 to 4.1	3.1 to 6.1	3.0 to 6.0
Free Product Thickness (mm)	ND	ND	DRY	ND	ND
Exceeded Soil Reference Criteria	No	No	No	No	No
Exceeded Groundwater Reference Criteria	No	No	NS	No	No
Vertical Soil Impact Delineation Achieved	Yes	Yes	Yes	Yes	Yes

Notes:
ND – not detected
mbgs – metres below ground surface
MOE – Ontario Ministry of the Environment
NM – not monitored
NS – not sampled

TABLE OF CONTENTS

Page

SUMMARY ..... **i**

LIST OF TABLES ..... **iii**

LIST OF DRAWINGS ..... **iii**

LIST OF APPENDICES ..... **iii**

1.0 INTRODUCTION **1**
1.1 Background **1**
1.2 Scope of Work **1**

2.0 ACTIVITIES **2**
2.1 Day-Lighting **2**
2.2 Borehole Drilling **2**
2.3 Monitoring Well Installation **2**
2.4 Soil Sampling **3**
2.5 Groundwater Monitoring and Sampling **3**
2.6 Laboratory Analyses **4**
2.7 Surveying **4**
2.8 Hydraulic Conductivity **4**

3.0 FINDINGS **5**
3.1 Field Observations **5**
3.1.1 Stratigraphy **5**
3.1.2 Groundwater **5**
3.1.3 Free Product **5**
3.1.4 Vapour Concentrations **5**
3.2 Selected Site Condition Standards **6**
3.3 Soil Analytical Results **6**
3.4 Groundwater Analytical Results **7**

4.0 SUMMARY AND CONCLUSIONS **7**

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE **8**

LIST OF TABLES:

Table I	**Groundwater Monitoring Results**
Table II	**Soil Analytical Results – Petroleum – Related Parameters and Lead**
Table III	**Groundwater Analytical Results – Petroleum Related Parameters and Lead**

LIST OF DRAWINGS:

Drawing No. 1	**Site Location Map**
Drawing No. 2	**Site Plan**
Drawing No. 3	**Site Plan and Limits of Excavation**
Drawing No. 4	**Elevation of the Potentiometric Surface for Wells Screened in Sand – March 16, 2010**
Drawing No. 5	**Soil Analytical Results**
Drawing No. 6	**Groundwater Analytical Results**

LIST OF APPENDICES:

Appendix A	**Borehole Logs**
Appendix B	**MOE Well Registration Record**
Appendix C	**Maxxam Analytics Laboratory Certificates of Analysis**
Appendix D	**Quality Assurance and Quality Control**
Appendix E	**Hydraulic Conductivity**

1.0 INTRODUCTION

O'Connor Associates Environmental Inc. was retained by Imperial Oil Limited to conduct a supplementary Phase II Environmental Site Assessment (ESA) at an operating Esso retail fuel outlet located at 1545 Woodroffe Avenue, in Ottawa, Ontario (the Site).

The purpose of the assessment was to assess potential petroleum hydrocarbon (PHC) related impacts in the soil and groundwater on-Site. The fieldwork was conducted between March 1 and 16, 2010.

1.1 Background

The Site location is shown on Drawing No. 1 and a Site plan is presented as Drawing No. 2. The borehole locations are presented on Drawing No. 3.

Imperial Oil operated the Site as a service station since the early 1960's. Prior to the 1960's, the land was used for agricultural purposes. The location of the repair garage in the 1975 configuration was moved to the west by 1983. Between 1983 and 1995, the Site was re-configured again; a repair garage was constructed and located in the northeast portion of the property. In 1993, the repair garage was converted to a Tim Hortons restaurant. The Site is currently an active petroleum retail outlet with a convenience store, carwash, the Tim Hortons restaurant, three gasoline underground storage tanks (UST), one diesel UST, and three pump islands and associated fuel distribution lines.

In 2009, a subsurface investigation was completed prior to undertaking a planned UST upgrade. At the time of the upgrade, the UST tank nest excavation was expanded to remove PHC contaminated soil. The historical borehole and test pit locations and the excavation limits are shown on Drawing No. 3.

1.2 Scope of Work

The work involved the following main activities:

- Advancing five boreholes (BH8 to BH12) and installing a monitoring well in each.
- Collecting soil samples from each borehole located: west of the tank nest; east of the convenience store; and north of the pump islands for laboratory analysis of the following parameters: benzene, toluene, ethylbenzene, xylene (BTEX), PHC fractions F1 to F4, and lead.
- Monitoring all wells for subsurface vapour concentrations, water levels and the presence of light non-aqueous phase liquid hydrocarbons (free product).

- Collecting groundwater samples from existing (BH5 to BH7) and newly installed monitoring wells (BH8 to BH12) for laboratory analysis of the following parameters: BTEX, PHC fractions F1 to F4 and lead.
- Prepare a report summarizing the investigation activities and findings.

2.0 ACTIVITIES

Prior to proceeding with the subsurface investigation, various utility representatives and a private utility locating contractor identified underground utility locations on March 1, 2010.

All field procedures were conducted in accordance with the Ontario Ministry of the Environment (MOE) document entitled *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (1996), and generally accepted industry practices.

2.1 Day-Lighting

Scott's Environmental Group was retained by O'Connor Associates to conduct the day-lighting activities. All five boreholes (BH8 to BH12) were day-lighted on March 1, 2010 using a vacuum excavator. All the boreholes were day-lighted to depths ranging from 1.8 m to 2.1 m below ground surface (bgs).

2.2 Borehole Drilling

George Downing Estate Drilling was retained by O'Connor Associates to advance BH8 to BH12. The historical and newly installed borehole locations are shown on Drawing No. 3. The boreholes were advanced to a maximum depth of 7.6 mbgs using a CME 75 truck-mounted flight auger rig between March 1 and 3, 2010.

2.3 Monitoring Well Installation

A monitoring well, consisting of a 50 mm diameter PVC screen and an unslotted riser, was installed in each borehole. The annular space between the PVC well and the borehole wall was backfilled to approximately 0.3 m above the top of the screen with silica sand, and then with bentonite pellets to approximately 0.1 mbgs. The monitoring well was then finished with a flush-mount casing set in concrete grout to protect the well from damage. The wells in BH8, BH9, BH11, and BH12 were screened in a sand layer beneath a shallower clayey silt layer. The well in BH10 was installed in the clayey silt.

Monitoring well installation details are presented on the borehole logs in Appendix A and in Table I. The MOE well record is presented in Appendix B.

2.4 Soil Sampling

Soil sampling was conducted at regular depth intervals in the boreholes using a stainless steel spoon sampling device or a split-spoon sampler. The sampling devices were washed prior to collection of each soil sample. Specifically, any excess soil was brushed off prior to scrubbing the sampling devices with soapy water, rinsing with distilled water and allowing it to air dry. The samples were collected from each device using a clean stainless steel trowel and nitrile gloves. Each soil sample was immediately split and one portion of the sample was sealed in a clean plastic bag for field screening, which included determining textural description, visual evidence of impact (e.g., staining or free product), and measurement of the sample combustible headspace vapour concentration (soil vapour concentration). The remainder of the sample was promptly placed in a container supplied by the laboratory and stored in coolers with ice for possible analysis.

The soil vapour concentrations were measured using a combustible gas detector (Gastech Model 1238ME) having a minimum detection level of 5 parts per million (ppm). The gas detector was operated in the methane elimination mode and calibrated each day with known concentrations of n-hexane.

Soil sampling details are presented on the borehole logs in Appendix A.

A minimum of two samples from each borehole were selected for laboratory analyses, based on sample location and/or field screening results. The samples were stored in coolers with ice prior to and during shipping to the laboratory.

The soil quality assurance and quality control (QA/QC) samples submitted to the laboratory included one field duplicate sample.

2.5 Groundwater Monitoring and Sampling

All of the wells were monitored on March 16, 2010 for groundwater levels, the presence or absence of free product, and subsurface vapour concentrations. The depth to the water table and presence/absence of free product in the wells were determined with an electronic interface probe that was cleaned with soapy water and rinsed with distilled water between monitoring wells. The subsurface vapour concentrations were measured approximately 0.5 mbgs in the monitoring wells with the combustible gas detector.

Groundwater samples were collected from all accessible new and existing monitoring wells on March 16, 2010. A sample could not be collected from BH10 because of excessive silt in the well. Prior to collecting the groundwater samples, the wells were purged until one of the following conditions was met: pH, conductivity and temperature readings were stable (within

10% of one another), a minimum of three standing well water volumes were recovered, or until the wells became dry. The water level in the wells was allowed to recover prior to sample recovery.

All groundwater samples were collected using bailers or Waterra foot valves and polyethylene tubing that were dedicated to each monitoring well. The groundwater samples were collected in containers supplied by the laboratory and stored in coolers with ice prior to and during shipment to the laboratory.

The groundwater QA/QC samples submitted to the laboratory included one field duplicate sample, a field blank, trip blank, and trip spike samples.

2.6 Laboratory Analyses

The soil and groundwater samples collected from the boreholes were submitted for laboratory analyses of one or more of the following parameters: BTEX, PHC fractions F1 to F4, and lead. A total of 11 soil samples and seven groundwater samples, excluding QA/QC samples, were submitted for analysis.

These laboratory analyses were conducted by Maxxam Analytics Inc. under contract to Imperial Oil. Maxxam is accredited by the Standards Council of Canada for the testing of all parameters listed in Ontario Regulation 153/04 under the Environmental Protection Act. Analytical methods used by the laboratory are referenced in the Certificates of Analysis presented in Appendix C. Analytical procedures were conducted in accordance with the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (2004).

2.7 Surveying

On March 15, 2010 all of the newly installed monitoring wells were surveyed vertically relative to the existing on Site wells.

2.8 Hydraulic Conductivity

Hydraulic conductivity slug testing was conducted at BH9 and BH11 on March 16 and 18, 2010. Both of these wells were screened in sand that was located below the clayey silt. Rising-head tests were conducted at each location by removing approximately 1 L of water with a bailer. Barometric and levelogger readings were recorded for the two monitoring wells in the range of 0.12 minutes at BH9 to 0.7 minutes at BH11.

3.0 FINDINGS

3.1 Field Observations

3.1.1 Stratigraphy

The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of asphalt; gravel and/or sand fill; peat and/or clayey silt; and sand. Detailed stratigraphic descriptions are presented on the borehole logs in Appendix A.

3.1.2 Groundwater

On March 16, 2010, the depth to groundwater in the sand ranged from 3.32 mbgs to 5.23 mbgs (an elevation of 83.85 m to 85.66 m, relative to a local benchmark, BH5, having an elevation of 88.787 m). The groundwater depths and the calculated potentiometric elevations are presented in Table I.

The groundwater potentiometric elevations in the monitoring wells screened in the sand are contoured on Drawing No. 4. The potentiometric elevations in the monitoring wells screened in the clayey silt were not determined because of limited data available. As indicated, the inferred principal direction of groundwater flow was to the northwest.

The hydraulic conductivity values (K) were calculated using the computer software AQTESOLV and the Springer-Gelhar and the Bouwer-Rice methods for unconfined aquifer conditions. The data sheets generated by AQTESTOLV and details of the bail tests are presented in Appendix E. The geometric mean hydraulic conductivity was calculated to be 3.93×10^{-4} m/s. Using Darcy's Law, and an assumed porosity of 0.25 and hydraulic gradient of 6.89×10^{-5} m/m, the estimated groundwater flow velocity in the sand was approximately 3.4 m/year.

3.1.3 Free Product

Free product was not observed in any of the soil samples collected during drilling. As indicated in Table I, free product was also not detected during monitoring of the wells on March 16, 2010.

3.1.4 Vapour Concentrations

Soil vapour concentrations measured in the samples recovered from the boreholes are presented on the logs in Appendix A. The soil vapour concentrations ranged from not detected (<25 ppm) to 65 % lower explosive limit (LEL).

Subsurface vapour concentrations measured in the monitoring wells on March 16, 2010 are presented in Table I. As indicated, the subsurface vapour concentrations ranged from 25 ppm to >100 % LEL.

3.2 Selected Site Condition Standards

For the current investigation, the approach to use the Ontario Regulation 153/04 generic site condition standards was selected.

The Site would not be considered environmentally sensitive, based on the following:

- The Site is not within or adjacent to an area of natural significance.
- The soil sample pH values were not less than 5 and not greater than 9 for surface soil and not less than 5 and greater than 11 for the subsurface soil.
- The bedrock surface is more than 2 m deep below more than two-thirds of the Site area.
- There were no surface water bodies identified within 30 m of the Site.

Consequently, the full depth generic site condition standards were selected for use. The following additional conditions were deemed applicable:

- Non-potable groundwater condition, as the Site and all other properties located within 100 m of the Site boundaries are supplied by a municipal drinking water system.
- The Site is not located in an area designated in a municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater.
- Medium and fine textured soils, as determined by the borehole logs, geological maps, and historical grain size analyses (see section 3.3), which collectively indicated that at least one-third of the native subsoils contain more than 50 percent of particles that are smaller than 75 µm in diameter.
- Industrial/commercial/community property use, as the current and intended future use of the Site is commercial.

Based on the above discussion, the applicable MOE (2004) Table 3 (non-potable) full depth site condition standards, for industrial/commercial/community land use and medium and fine textured soils, were selected for comparison with the soil and groundwater analytical results.

3.3 Soil Analytical Results

The soil analytical results for BTEX, PHC fractions F1 to F4, and lead are presented and compared to the applicable MOE Table 3 standards in Table II. As indicated, all of the results satisfied the applicable standards.

The soil analytical results for BTEX, PHC fractions F1 to F4, and lead are also presented on Drawing No. 5.

The results of the field QA/QC sample analysis, which included a field blank and field duplicates, were considered acceptable with respect to conventional QA/QC standards. Laboratory QA/QC results including method blanks, matrix duplicates, matrix spikes, and laboratory control samples are presented in the laboratory certificates of analysis in Appendix C. The QA/QC discussion and tables are presented in Appendix D. In summary, no QA/QC issues that would affect the overall results of the Site assessment were identified.

3.4 Groundwater Analytical Results

The groundwater analytical results for PHC fractions F1 to F4 and lead are compared to the applicable MOE Table 3 standards in Tables III. As indicated, all of the results satisfied the applicable standards. There are no standards for PHC fractions F1 to F4.

The groundwater analytical results for BTEX, PHC fractions F1 to F4, and lead are also presented on Drawing No. 6.

The results of the field QA/QC sample analysis, which included a trip spike, trip blank, field blank and field duplicates were considered acceptable with respect to conventional QA/QC standards. Laboratory QA/QC results including method blanks, matrix duplicates, matrix spikes, and laboratory control samples are presented in the laboratory certificates of analysis in Appendix C. The QA/QC discussion and tables are presented in Appendix D. In summary, no QA/QC issues that would affect the overall results of the Site assessment were identified.

4.0 SUMMARY AND CONCLUSIONS

During this supplementary Phase II ESA, five boreholes were advanced and monitoring wells were installed in each borehole. Soil samples from each borehole and groundwater samples from the new and existing accessible monitoring wells were submitted for laboratory analysis of the following parameters: BTEX, PHC fractions F1 to F4, and lead.

The results of the investigation are summarized as follows:

1. The stratigraphic profile encountered in the boreholes with increasing depth generally consisted asphalt; gravel or sand fill; peat and/or clayey silt; and sand.
2. The groundwater potentiometric surface in wells screened in the sand ranged from 3.32 mbgs to 5.23 mbgs (elevation 83.85 m to 85.66 m) on March 16, 2010. The inferred principal direction of groundwater flow in the sand was to the northwest and the estimated groundwater flow velocity in the sand was approximately 3.4 m/year.

3. Free product was not observed in any of the soil samples collected during drilling. Free product was not detected during monitoring of the wells on March 16, 2010.
4. The MOE (2004) Table 3 (non potable) site condition standards for medium and fine textured soils and commercial/industrial/community land use were selected for comparison with the soil and groundwater analytical results.
5. All soil sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, and lead.
6. All groundwater sample analytical results satisfied the applicable Table 3 standards for BTEX, and lead. There are no standards for PHC F1 to F4.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc. for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective (insurers), agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and O'Connor Associates make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation may exist

in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

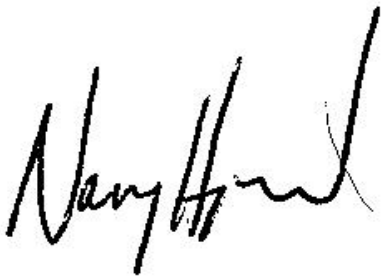
If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates. Nothing in this report is intended to constitute or provide a legal opinion.

We trust the foregoing information is satisfactory for your requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.



Nancy Haywood A.Sc.T Gerry Parrott, P.Geo.

MJM: jrw

Distribution: (2) Imperial Oil Limited (w/ CD)

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)[3]	POTENTIOMETRIC SURFACE DEPTH (mbgs)	POTENTIOMETRIC SURFACE ELEVATION[1] (m)
BH1	88.506	88.612	1.8 - 4.3	2008/11/19 2008/12/11 2009/05/12 2010/03/16	>100% 45% AW AW	DRY DRY AW AW	DRY DRY AW AW	DRY DRY AW AW
BH2	88.333	88.508	1.52 - 4.27	2008/11/19 2008/12/11 2009/05/12 2010/03/16	325 175 AW AW	ND ND AW AW	4.246 3.402 AW AW	84.262 85.106 AW AW
BH3	88.500	88.634	4.57 - 6.10	2008/11/19 2008/12/11 2009/05/12 2010/03/16	70% >100% AW AW	ND ND AW AW	4.981 4.946 AW AW	83.653 83.688 AW AW
BH4	88.618	88.718	4.15 - 6.10	2008/11/19 2008/12/11 2009/05/12 2010/03/16	170 5% AW AW	ND ND AW AW	5.064 5.038 AW AW	83.654 83.680 AW AW
BH5	88.787 88.789	88.854 88.920	1.83 - 4.57	2008/11/19 2008/12/11 2009/05/12 2010/03/16	20% 20% 95 75	ND ND ND ND	4.370 4.130 3.172 3.323	84.484 84.724 85.682 85.597
BH6	88.768 88.821	88.885 88.950	1.95 - 4.69	2008/11/19 2008/12/11 2009/05/12 2010/03/16	25% >100% 11% 25%	ND Sheen ND ND	5.251 5.226 4.990 5.086	83.634 83.659 83.895 83.864
BH7	88.865 88.853	88.936 88.970	1.95 - 4.69	2008/11/19 2008/12/11 2009/05/12 2010/03/16	150 225 160 50	ND ND ND ND	3.862 3.672 3.142 3.305	85.074 85.264 85.794 85.665
BH8	88.882	89.000	4.5 - 6.0	2010/03/16	75	ND	5.141	83.859
BH9	88.967	89.100	5.8 - 7.3	2010/03/16	25	ND	5.230	83.870 *
BH10	88.467	88.560	1.5 - 4.1	2010/03/16	50	DRY	DRY	DRY
BH11	88.434	88.570	3.1 - 6.1	2010/03/16	5%	ND	4.697	83.873
BH12	88.743	88.820	3.0 - 6.0	2010/03/16	>100%	ND	4.965	83.855

1 - Relative to local benchmark (BH5) having an elevation of 88.787 m
2 - ppm or, if shown as %, LEL
3 - Product thickness have been calculated using a specific gravity value of 0.71
bgs - Below ground surface
NM - Not monitored
ND - Not detected
AW - Abandoned well
* - Water level above top of screen

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETERS	STANDARDS	SAMPLE LOCATIONS									
	TABLE 3[a]	BH-8-6	BH-8-8	BH-9-5	BH-9-9	BH-10-3	BH-10-4	QA11 Duplicate - BH-10-4	BH-11-5	BH-11-7	BH-11-8
Depth (m)		4.42	5.94	3.66	6.71	2.13	2.90	2.90	3.66	5.18	5.94
Date Sampled		2010/03/01	2010/03/01	2010/03/02	2010/03/02	2010/03/01	2010/03/02	2010/03/02	2010/03/02	2010/03/02	2010/03/02
Moisture Content (%)	-	19	19	18	15	53	23	20	30	14	15
Benzene	25	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	150	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	1000	<0.02	0.16	<0.02	<0.02	0.17	<0.02	<0.02	0.49	<0.02	<0.02
o-Xylene	-	<0.04	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	0.10	<0.02	<0.02
p+m-Xylenes	-	<0.02	0.11	<0.04	<0.04	1.5	<0.04	<0.04	0.22	0.08	<0.04
Total Xylenes	210	<0.04	0.11	<0.04	<0.04	1.5	<0.04	<0.04	0.32	0.08	<0.04
Petroleum Hydrocarbons F1 (C6 - C10)[b]	660	<10	<10	<10	<10	29	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	1500	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	2500	<10	<10	<10	<10	120	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F4 (>C34)	6600	<10	<10	<10	<10	120	<10	<10	<10	<10	<10
Lead	1000	7	7	<5	7	13	<5	7	5	6	<5

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004), industrial/commercial/community property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

NV - No value

* - Result from F4 gravimetric analysis

BOLD - Exceeds standard

SOIL ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETERS	STANDARDS	SAMPLE LOCATIONS	
		BH-12-4	BH-12-8
	TABLE 3[a]		
Depth (m)		2.90	5.94
Date Sampled		2010/03/03	2010/03/03
Moisture Content (%)	-	12	13
Benzene	25	0.15	0.14
Toluene	150	2.4	0.46
Ethylbenzene	1000	2.1	0.34
o-Xylene	-	4.1	0.29
p+m-Xylenes	-	8.5	0.87
Total Xylenes	210	13	1.2
Petroleum Hydrocarbons F1 (C6 - C10)[b]	660	60	12
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	1500	81	<10
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	2500	28	<10
Petroleum Hydrocarbons F4 (>C34)	6600	<10	<10
Lead	1000	<5	<5

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004), industrial/commercial/community property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

NV - No value

* - Result from F4 gravimetric analysis

BOLD - Exceeds standard

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/L)

PARAMETERS	STANDARDS	SAMPLE LOCATIONS							
	TABLE 3[a]	BH5	BH6	BH7	BH8	BH9	BH11	BH12	QA1 Duplicate - BH12
Date Sampled		2010/03/16	2010/03/16	2010/03/16	2010/03/16	2010/03/16	2010/03/16	2010/03/16	2010/03/16
Benzene	12 000	<4	450	<0.2	140	<0.2	0.7	1500	1400
Toluene	37 000	9	47	<0.2	10	0.9	14	230	220
Ethylbenzene	50 000	2800	1500	<0.2	610	<0.2	20	670	630
o-Xylene	-	290	240	<0.2	34	<0.2	32	94	87
p+m-Xylene	-	9300	3300	0.6	130	<0.4	170	200	180
Total Xylenes	35 000	9600	3500	0.6	160	<0.4	200	290	270
Petroleum Hydrocarbons F1 (C6 - C10)[b]	NV	11 000	5600	<100	910	<100	850	2700	2800
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	NV	4900	650	<100	460	<100	460	1000	1100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	NV	240	2100	<100	<100	<100	<100	<100	<100
Petroleum Hydrocarbons F4 (>C34)	NV	<100	730	<100	110	<100	<100	<100	<100
Lead	32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (March 2004), all types of property use, medium and fine textured soils

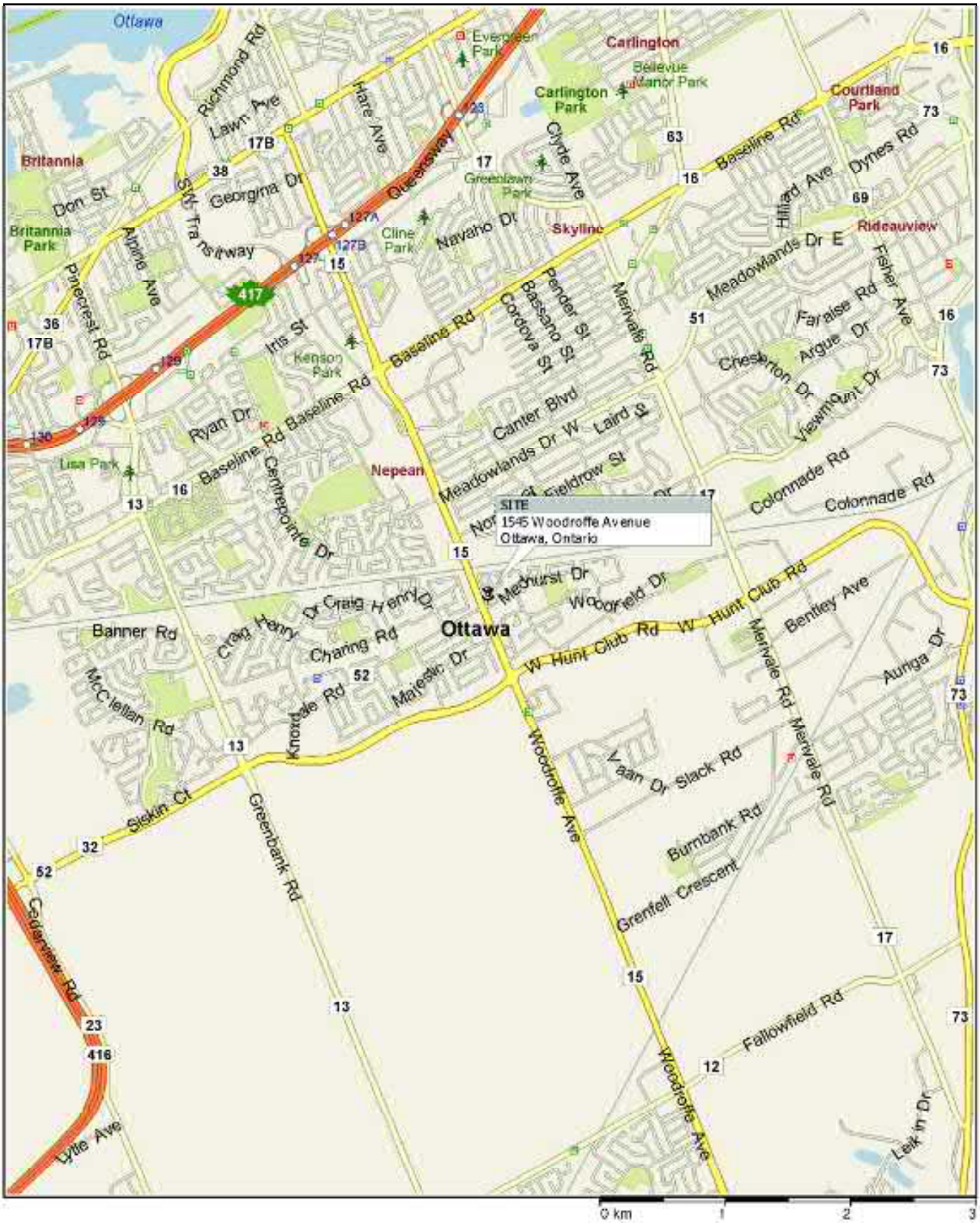
b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

NV - No value

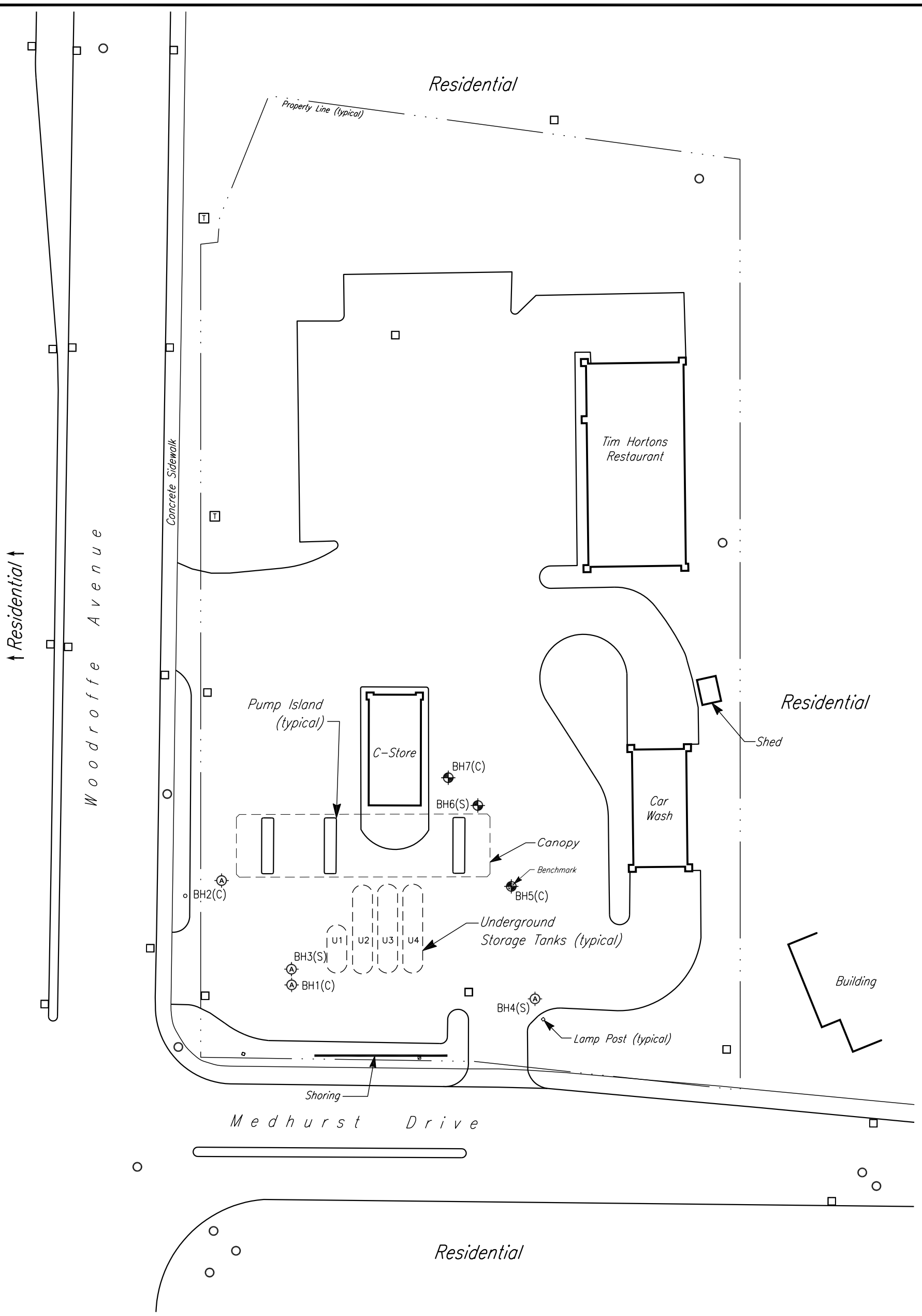
BOLD - Exceeds standard



REFERENCE: Microsoft Streets and Trips, 2007.

Site Location Map
1545 Woodroffe Avenue, Ottawa, Ontario

Job No.: 10-8518T02	Date: 2010/06/09	
File: 8518T028	Drawn: EHC	Review: JM
O'CONNOR ASSOCIATES		Dwg. No. 1



LEGEND

- Former Facility
- Manhole
- Catch Basin
- Transformer (Pad Mounted)
- Monitoring Well
  - BH1 to BH7 by O'Connor 2008
  - Screened in Sand
  - Screened in Silty Clay
- Abandoned Monitoring Well

Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active

0 5 10 15 20 25m

Original Scale 1:500

NOTE: All features are approximate.

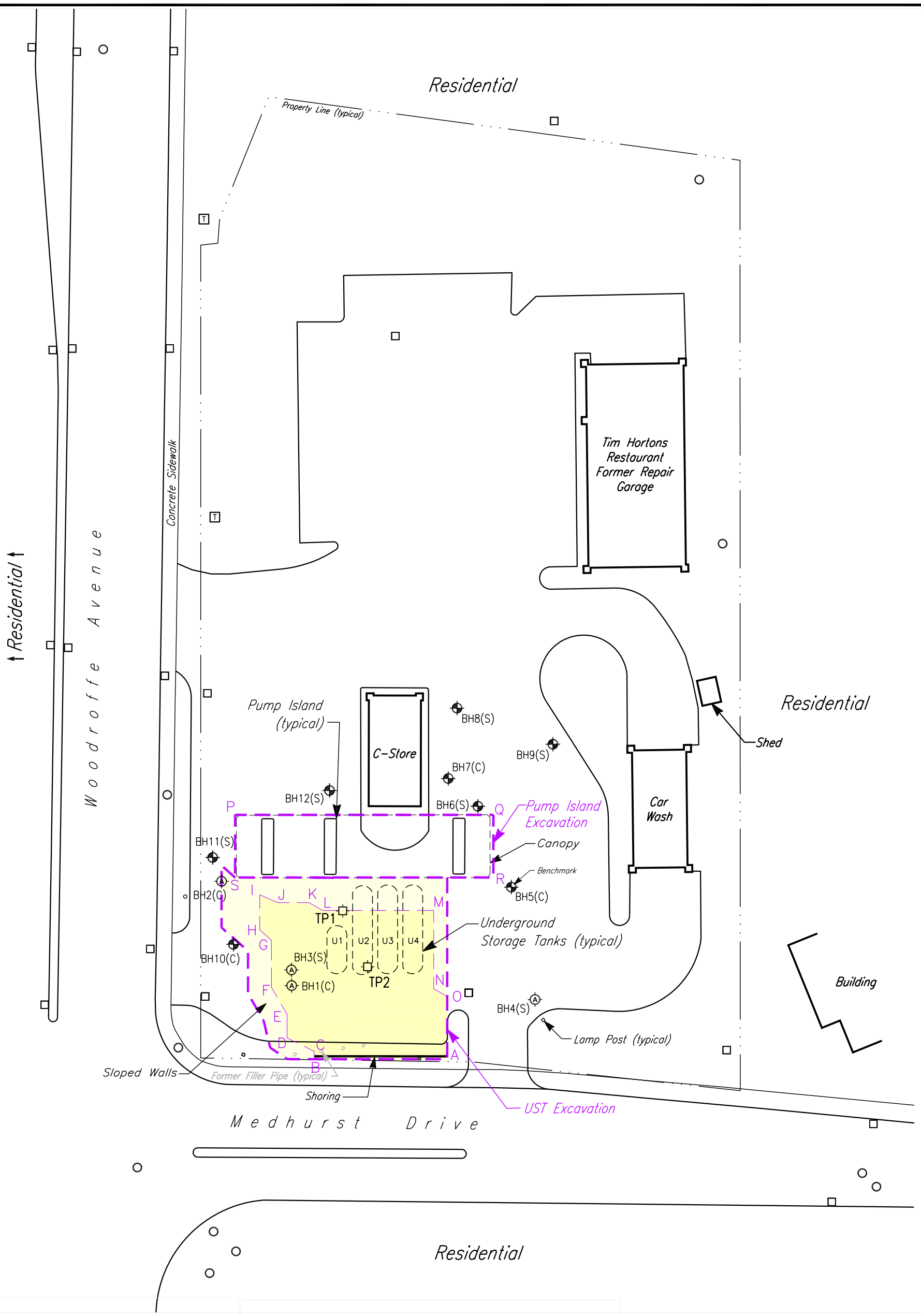
REFERENCE: Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

Site Plan
1545 Woodroffe Avenue, Ottawa, Ontario

Job No.: 10-8518T02	Date: 2010/06/25	
File: 8518S029	Drawn: EHC	Review: MJM

O'CONNOR ASSOCIATES

Dwg. No. 2



LEGEND

- Former Facility
- Manhole
- Catch Basin
- Transformer (Pad Mounted)
- Monitoring Well
  - BH1 to BH7 by O'Connor 2008
  - BH8 to BH12 by O'Connor 2010
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- Test Pit
- Abandoned Monitoring Well

Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active

NOTE: All features are approximate.

REFERENCE: Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

0 5 10 15 20 25m

Original Scale 1:500

Site Plan and Limits of Excavation
1545 Woodroffe Avenue, Ottawa, Ontario

Job No.: 10-8518T02	Date: 2010/06/2509	
File: 8518S027	Drawn: EHC	Review: JM

O'CONNOR ASSOCIATES

Dwg. No. 3

Residential

Property Line (typical)

Residential

Concrete Sidewalk

Woodroffe Avenue

Tim Hortons
Restaurant
Former Repair
Garage

Pump Island
(typical)

C-Store

Car
Wash

Shed

Residential

Canopy

Benchmark

Underground
Storage Tanks (typical)

Building

Lamp Post (typical)

Former Filler Pipe (typical)

Shoring

Medhurst Drive

Residential

83.858
83.860
83.862
83.864
83.866
83.868
83.870
83.872
83.873
83.856
83.855
83.859

BH1(C)
BH2(C)
BH3(S)
BH4(S)
BH5(C)
BH6(S) 83.864
BH7(C) NM
BH8(S) 83.859
BH9(S) 83.870
BH10(C) NM
BH11(S) 83.873
BH12(S) 83.855
TP1
TP2
U1
U2
U3
U4

LEGEND

- Manhole
- Catch Basin
- Transformer (Pad Mounted)
- Monitoring Well
  - BH1 to BH7 by O'Connor 2008
  - BH8 to BH12 by O'Connor 2010
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- Test Pit
- Abandoned Monitoring Well
- Inferred Direction of Groundwater Flow
- NM Not Monitored

Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active

NOTE: Contouring based on Surfer® linear kriging computer modelling.

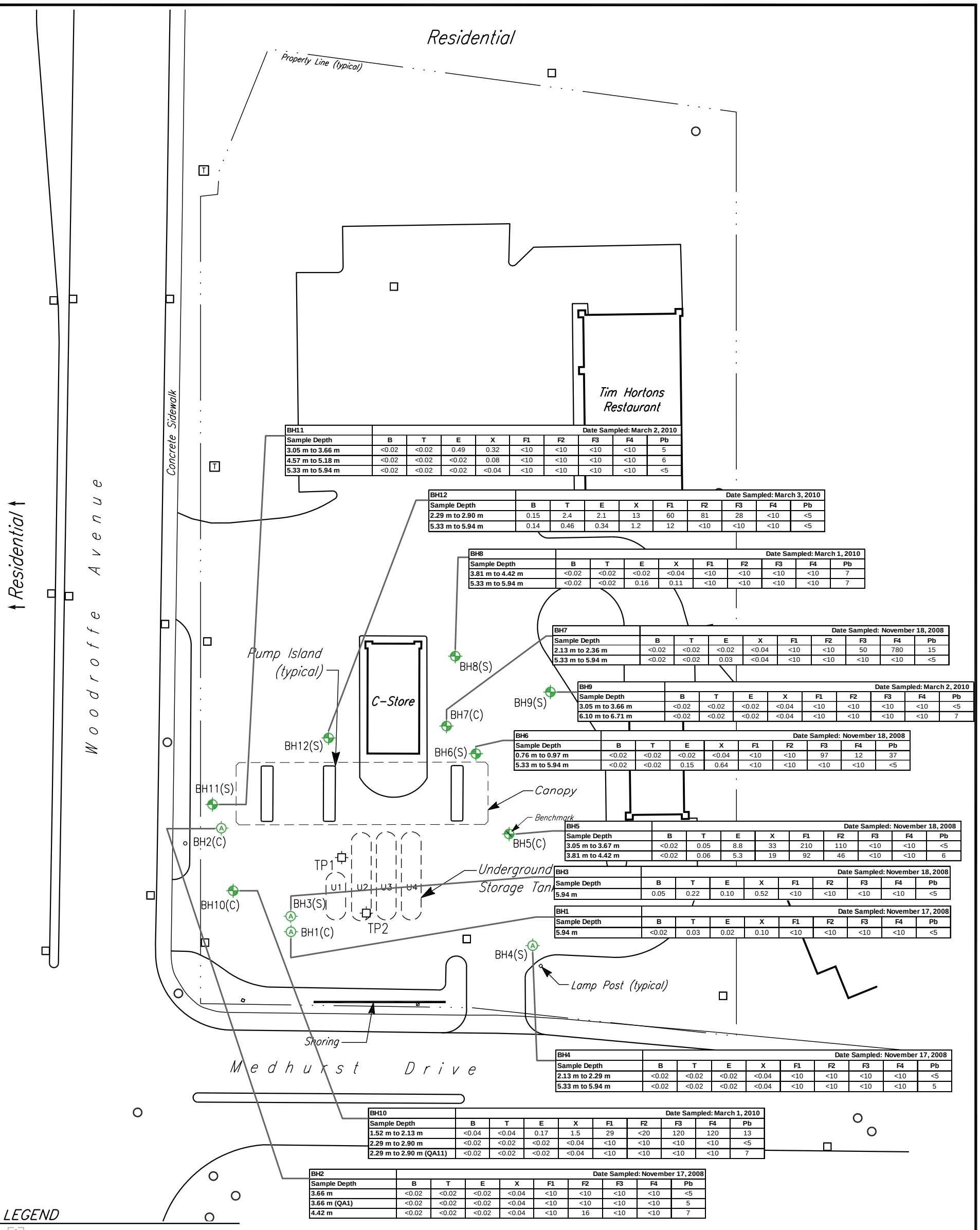
REFERENCE: Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

0 5 10 15 20 25m

Original Scale 1:500

Elevation of the Potentiometric Surface (m)
For Wells Screened in Sand
2010/03/16
1545 Woodroffe Avenue, Ottawa, Ontario

Job No.: 10-8518T02	Date: 2010/06/25	
File: 8518M035	Drawn: EHC	Review: MJM
O'CONNOR ASSOCIATES		Dwg. No. 4



BH11	Date Sampled: March 2, 2010								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.05 m to 3.66 m	<0.02	<0.02	0.49	0.32	<10	<10	<10	<10	5
4.57 m to 5.18 m	<0.02	<0.02	<0.02	0.08	<10	<10	<10	<10	6
5.33 m to 5.94 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<5

BH12	Date Sampled: March 3, 2010								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
2.29 m to 2.90 m	0.15	2.4	2.1	13	60	81	28	<10	<5
5.33 m to 5.94 m	0.14	0.46	0.34	1.2	12	<10	<10	<10	<5

BH8	Date Sampled: March 1, 2010								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.81 m to 4.42 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	7
5.33 m to 5.94 m	<0.02	<0.02	0.16	0.11	<10	<10	<10	<10	7

BH7	Date Sampled: November 18, 2008								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
2.13 m to 2.36 m	<0.02	<0.02	<0.02	<0.04	<10	<10	50	780	15
5.33 m to 5.94 m	<0.02	<0.02	0.03	<0.04	<10	<10	<10	<10	<5

BH9	Date Sampled: March 2, 2010								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.05 m to 3.66 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<5
6.10 m to 6.71 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	7

BH6	Date Sampled: November 18, 2008								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
0.76 m to 0.97 m	<0.02	<0.02	<0.02	<0.04	<10	<10	97	12	37
5.33 m to 5.94 m	<0.02	<0.02	0.15	0.64	<10	<10	<10	<10	<5

BH5	Date Sampled: November 18, 2008								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.05 m to 3.67 m	<0.02	0.05	8.8	33	210	110	<10	<10	<5
3.81 m to 4.42 m	<0.02	0.06	5.3	19	92	46	<10	<10	6

BH3	Date Sampled: November 18, 2008								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
5.94 m	0.05	0.22	0.10	0.52	<10	<10	<10	<10	<5

BH1	Date Sampled: November 17, 2008								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
5.94 m	<0.02	0.03	0.02	0.10	<10	<10	<10	<10	<5

BH4	Date Sampled: November 17, 2008								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
2.13 m to 2.29 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<5
5.33 m to 5.94 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	5

BH10	Date Sampled: March 1, 2010								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
1.52 m to 2.13 m	<0.04	<0.04	0.17	1.5	29	<20	120	120	13
2.29 m to 2.90 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<5
2.29 m to 2.90 m (QA11)	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	7

BH2	Date Sampled: November 17, 2008								
Sample Depth	B	T	E	X	F1	F2	F3	F4	Pb
3.66 m	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<5
3.66 m (QA1)	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	5
4.42 m	<0.02	<0.02	<0.02	<0.04	<10	16	<10	<10	7

LEGEND

- Manhole
- Catch Basin
- T Transformer (Pad Mounted)
- Monitoring Well
  - BH1 to BH7 by O'Connor 2008
  - BH8 to BH12 by O'Connor 2010
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- Test Pit
- Abandoned Monitoring Well

Analytical Results

Location Where Results Met
Referenced Standard (shown in green)

Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active

NOTE: All features are approximate.

REFERENCE: Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

Standards

Parameter	Shown As	Units	Table 3 Standards*
Benzene	B	µg/g	25
Toluene	T	µg/g	150
Ethylbenzene	E	µg/g	1000
Total Xylenes	X	µg/g	210
PHC F1 - BTEX	F1	µg/g	660
PHC F2	F2	µg/g	1500
PHC F3	F3	µg/g	2500
PHC F4	F4	µg/g	6600
Lead	Pb	µg/g	1000

* MOE (2004) All types of property use, medium and fine textured soils.

PHC Petroleum Hydrocarbons

NV No Value

0 5 10 15 20 25m

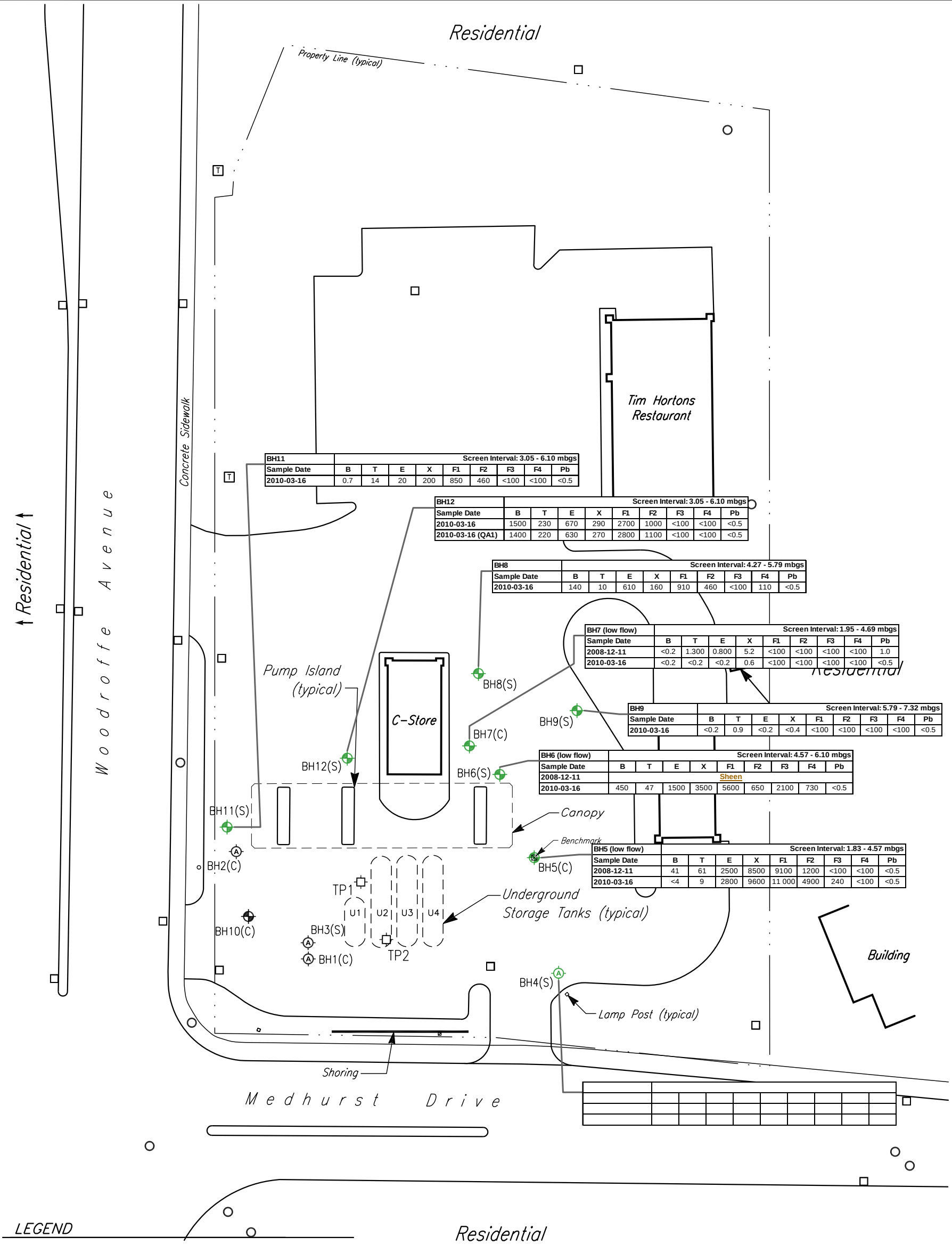
Original Scale 1:500

Soil Analytical Results
1545 Woodroffe Avenue, Ottawa, Ontario

Job No.: 10-8518T02 | Date: 2010/06/25
File: 8518G034 | Drawn: EHC | Review: JM

O'CONNOR ASSOCIATES

Dwg. No. 5



BH11	Screen Interval: 3.05 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010-03-16	0.7	14	20	200	850	460	<100	<100	<0.5

BH12	Screen Interval: 3.05 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010-03-16	1500	230	670	290	2700	1000	<100	<100	<0.5
2010-03-16 (QA1)	1400	220	630	270	2800	1100	<100	<100	<0.5

BH8	Screen Interval: 4.27 - 5.79 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010-03-16	140	10	610	160	910	460	<100	110	<0.5

BH7 (low flow)	Screen Interval: 1.95 - 4.69 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	<0.2	1.300	0.800	5.2	<100	<100	<100	<100	1.0
2010-03-16	<0.2	<0.2	<0.2	0.6	<100	<100	<100	<100	<0.5

BH9	Screen Interval: 5.79 - 7.32 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010-03-16	<0.2	0.9	<0.2	<0.4	<100	<100	<100	<100	<0.5

BH6 (low flow)	Screen Interval: 4.57 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	Sheen								
2010-03-16	450	47	1500	3500	5600	650	2100	730	<0.5

BH5 (low flow)	Screen Interval: 1.83 - 4.57 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008-12-11	41	61	2500	8500	9100	1200	<100	<100	<0.5
2010-03-16	<4	9	2800	9600	11 000	4900	240	<100	<0.5

LEGEND

- Manhole
- Catch Basin
- Transformer (Pad Mounted)
- Monitoring Well
  - BH1 to BH7 by O'Connor 2008
  - BH8 to BH12 by O'Connor 2010
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- Test Pit
- Abandoned Monitoring Well

Analytical Results

- Location Where Results Met Referenced Standard (shown in green)
- Location Where a Result Exceeded Comparative Criteria (shown in red)
- Location Where Free Product Was Encountered (shown in brown)
- DUP/QA — Duplicate Sample
- mbgs — Metres Below Ground Surface

Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active

NOTE: All features are approximate.

REFERENCE: Property Line from Clark Wilkinson Alton Surveying, Survey Plan, dated July 21, 2006.

Standards

Parameter	Shown As	Units	Table Standards 3*
Benzene	B	µg/L	12 000
Toluene	T	µg/L	37 000
Ethylbenzene	E	µg/L	50 000
Total Xylenes	X	µg/L	35 000
PHC F1 - BTEX	F1	µg/L	NV
PHC F2	F2	µg/L	NV
PHC F3	F3	µg/L	NV
PHC F4	F4	µg/L	NV
Lead	Pb	µg/L	32

* MOE (2004) All types of property use, medium and fine textured soils.
PHC Petroleum Hydrocarbons
NV No Value

0 5 10 15 20 25m

Original Scale 1:500

Groundwater Analytical Results
1545 Woodroffe Avenue, Ottawa, Ontario

Job No.: 10-8518T02 | Date: 2010/06/25
File: 8518B033 | Drawn: EHC | Review: JM

O'CONNOR ASSOCIATES

Dwg. No. 6

APPENDIX A

BOREHOLE LOGS

PROJECT: Environmental Site Assessment	JOB NO: 10-8518T02	BOREHOLE NO: **BH8**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.882 m	START DATE: 2010/03/01
CLIENT: Imperial Oil Limited	GRADE ELEV.: 89.000 m	COMPLETION DATE: 2010/03/02

SAMPLE TYPE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE SS - SPLIT SPOON ST - SHELBY TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) Water Level
0	ASPHALT (Fill)											
	GRAVEL (Fill) - gray, coarse grained, damp		1	G				▲				
	SAND AND GRAVEL (Fill) - olive, coarse grained, silty, damp											
	- gray from 0.8 m to 1.4 m		2	G				▲				
	- some bricks from 1.5 m to 1.8 m		3	G				▲				5
2			4	SS	20	50		▲				
	SILT - gray, fine grained, clayey, moist											
			5	SS	7	0						10
	- wet below 3.8 m		6	SS	1	80	BH8-6 / BTEX, PHC F1-F4, Lead	▲				
	SAND - gray, coarse grained, wet		7	SS	13	10						15
5 ▼										Potentiometric Surface 2010/03/16		▼
			8	SS	13	60	BH-8-8 / BTEX, PHC F1-F4, Lead	▲				
6	END OF HOLE AT 6.1 m									Monitoring Well Installed to 6.0 m, 50 mm Dia. PVC Pipe, Screened from 4.5 m to 6.0 m		20
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: CSR	DAYLIGHTING TO: 1.8 m	GAS METER TYPE: GasTech 1238ME
REVIEWED BY: MJM	MACHINE: CME-75	
DRAFTED BY: EHC	METHOD: Hollow Stem Auger	Page 1 of 1

OAEI REPORT LOG 15 8518T02.GPJ SOIL LOG (REV 2).GDT 6/11/10

PROJECT: Environmental Site Assessment	JOB NO: 10-8518T02	BOREHOLE NO: **BH9**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.967 m	START DATE: 2010/03/01
CLIENT: Imperial Oil Limited	GRADE ELEV.: 89.100 m	COMPLETION DATE: 2010/03/02

SAMPLE TYPE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE SS - SPLIT SPOON ST - SHELBY TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) Water Level
0	ASPHALT (Fill)											
	GRAVEL (Fill) - gray, coarse grained, damp		1	G								
	SAND (Fill) - light brown, medium grained, damp											
1			2	G								
	SAND - olive, fine grained, some clay, damp		3	G								5
2												
	SILT - olive, fine grained, sandy, moist		4	SS	21	60						
3	- gray, medium grained, wet below 3.0 m		5	SS	8	100	BH-9-5 / BTEX, PHC F1-F4, Lead					10
	- fine grained, clayey below 3.8 m		6	SS	1	90						
4												
			7	SS	1	90						15
5	▼									Potentiometric Surface on 2010/03/16		▼
			8	SS	9	90						
	SAND - gray, coarse grained, wet											
6												20
			9	SS	18	30	BH-9-9 / BTEX, PHC F1-F4, Lead					
7												
			10	SS	24	30				Monitoring Well Installed to 7.3 m, 50 mm Dia. PVC Pipe, Screened from 5.8 m to 7.3 m		25
	END OF HOLE AT 7.6 m											
8												
9												30
10												

O'CONNOR ASSOCIATES	LOGGED BY: CSR	DAYLIGHTING TO: 2.1 m	GAS METER TYPE: GasTech 1238ME
	REVIEWED BY: MJM	MACHINE: CME-75	
	DRAFTED BY: EHC	METHOD: Hollow Stem Auger	Page 1 of 1

PROJECT: Environmental Site Assessment	JOB NO: 10-8518T02	BOREHOLE NO: **BH10**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.467 m	START DATE: 2010/03/01
CLIENT: Imperial Oil Limited	GRADE ELEV.: 88.560 m	COMPLETION DATE: 2010/03/02

SAMPLE TYPE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE SS - SPLIT SPOON ST - SHELBY TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m)	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft)
0	ASPHALT (Fill)											
	GRAVEL (Fill) - gray, coarse grained, some sand and silt, damp		1	G				▲				
1			2	G				▲				5
	PEAT - black, fine grained, trace silt, damp, petroleum odour											
	SILT - dark gray, fine grained, clayey, some gravel, damp		3	G		4	BH-10-3 / BTEX, PHC F1-F4, Lead	▲				
2	- olive, sandy, moist below 2.3 m											
	- gray, clayey below 2.6 m		4	SS	8	30	BH-10-4 / BTEX, PHC F1-F4, Lead	▲				10
3			5	SS	1	5		▲				
4			6	SS	15	90		▲		Monitoring Well Installed to 4.1 m, 50 mm Dia. PVC Pipe, Screened from 1.5 m to 4.1 m		15
	SAND - gray, coarse grained, wet											
5			7	SS	20	60		▲				
			8	SS	18	50		▲				20
6	END OF HOLE AT 6.1 m											
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: CSR	DAYLIGHTING TO: 2.1 m	GAS METER TYPE: GasTech 1238ME
REVIEWED BY: MJM	MACHINE: CME-75	
DRAFTED BY: EHC	METHOD: Hollow Stem Auger	Page 1 of 1

OAEI REPORT LOG 15 8518T02.GPJ SOIL LOG (REV 2).GDT 6/11/10

PROJECT: Environmental Site Assessment	JOB NO: 10-8518T02	BOREHOLE NO: **BH11**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.434 m	START DATE: 2010/03/01
CLIENT: Imperial Oil Limited	GRADE ELEV.: 88.570 m	COMPLETION DATE: 2010/03/02

SAMPLE TYPE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE SS - SPLIT SPOON ST - SHELBY TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) Water Level
0	ASPHALT (Fill)											
	GRAVEL (Fill) - light brown, damp		1	G				▲				
	SAND (Fill) - light brown, some gravel, damp - reddish brown below 0.6 m											
1	SILT - olive, fine grained, sandy, moist		2	G				▲				
			3	G				▲				5
2			4	SS	10	70		▲				
	- black staining from 2.8 m to 3.7 m											
3	- gray, clayey, wet, petroleum odour below 3.0 m		5	SS	1	50	BH-11-5 / BTEX, PHC F1-F4, Lead	▲				10
4			6	SS	1							
	SAND - light gray, coarse grained, wet, petroleum odour		7	SS	22	40	BH-11-7 / BTEX, PHC F1-F4, Lead	▲		Potentiometric Surface on 2010/03/16		15
5	- black staining from 4.6 m to 5.2 m											
			8	SS	23	60	BH-11-8 / BTEX, PHC F1-F4, Lead	▲				
6	END OF HOLE AT 6.1 m									Monitoring Well Installed to 6.1 m, 50 mm Dia. PVC Pipe, Screened from 3.0 m to 6.1 m		20
7												
												25
8												
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: CSR | DAYLIGHTING TO: 2.1 m | GAS METER TYPE: GasTech 1238ME

REVIEWED BY: MJM | MACHINE: CME-75

DRAFTED BY: EHC | METHOD: Hollow Stem Auger

OAEI REPORT LOG 15 8518T02.GPJ SOIL LOG (REV 2).GDT 6/11/10

PROJECT: Environmental Site Assessment	JOB NO: 10-8518T02	BOREHOLE NO: **BH12**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.743 m	START DATE: 2010/03/01
CLIENT: Imperial Oil Limited	GRADE ELEV.: 88.820 m	COMPLETION DATE: 2010/03/02

SAMPLE TYPE DC - DRILL CUTTING G - GRAB SL - SLEEVED TUBE SS - SPLIT SPOON ST - SHELBY TUBE OS - OTHER | 'N' Value R - >/= 50 BLOWS FOR </= 150 mm

BACKFILL TYPE SAND | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND/GRAVEL | BENTONITE / CONCRETE

Depth (m) Water Level	STRATIGRAPHY DESCRIPTION	SYMBOL	SAMPLING NUMBER	TYPE	'N' VALUE	RECOVERY %	I.D. / LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppm) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	MONITORING WELL NOTES & ADDITIONAL COMMENTS	SLOTTED PIEZOMETER	Depth (ft) Water Level
0	ASPHALT (Fill)											
	GRAVEL (Fill) - reddish brown, coarse grained, damp		1	G				▲				
1			2	G				▲				
	PEAT - black, moist, petroleum odour											5
2			3	G					◆			
	SILT - gray, fine grained, clayey, some sand, moist, petroleum odour		4	SS	10	60	BH-12-4 / BTEX, PHC F1-F4, Lead					
3			5	SS	7	30			◆			10
4			6	SS	1	90		▲				
			7	SS	6	70						15
5 ▼										Potentiometric Surface on 2010/03/16		
	SAND - gray, corse grained, trace sand, wet, petroleum odour											
	- medium grained below 5.3 m		8	SS	32	30	BH-12-8 / BTEX, PHC F1-F4, Lead	▲				
6	- fine grained at 6.1 m											20
	END OF HOLE AT 6.1 m									Monitoring Well Installed to 6.0 m, 50 mm Dia. PVC Pipe, Screened from 3.0 m to 6.0 m		
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES

LOGGED BY: CSR	DAYLIGHTING TO: 2.1 m	GAS METER TYPE: GasTech 1238ME
REVIEWED BY: MJM	MACHINE: CME-75	
DRAFTED BY: EHC	METHOD: Hollow Stem Auger	Page 1 of 1

OAEI REPORT LOG 15 8518T02.GPJ SOIL LOG (REV 2).GDT 6/11/10

APPENDIX B

MOE WELL REGISTRATION RECORD

Ontario — Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*: A 090629 — BH # 12

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 2

Master Well Owner's and Land Owner's Information

First Name	Last Name	E-mail Address
Imperial Oil		

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
90 Wynford Drive	Toronto	ON	M3C1K5	4164141718614

Location and Construction of the Master Well in the Cluster

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
1545 Woodroffe Ave			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Ottawa	Ontario	

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
NAD 83	18	441108	5026778	Garmin	Etrex	☐ Undifferentiated ☐ Differentiated, specify ☐ Averaged

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
	Asphalt			0	0.2
Red/Brown	Fill gravel		coarse damp	0.2	1.3
Black	Peat			1.3	2.3
Grey	Silt, clayey	Sand	fine moist	2.3	5.0
"	Sand			5.0	6.1

Hole Details

Depth (Metres) From	Depth (Metres) To	Diameter (Centimetres)
0	6.1	20

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, specify
☐ Domestic ☐ Commercial ☐ Dewatering
☐ Livestock ☐ Municipal ☑ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☐ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☑ Other, specify: HSA
☐ Rotary (Air) ☐ Driving

Status of Well

☑ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, specify
☐ Alteration (Construction) ☐ Abandoned, other, specify

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	Depth (Metres) To
5.1	PVC casing	Sched 40	0	3.0
	Screen		3.0	6.1

No Casing and Screen Used

Open Hole ☐ Yes ☑ No

Static Water Level Test

Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☑ Plastic

Outside Diameter (Centimetres)	Slot No.
5.8	10

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	Depth Set at (Metres) To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0	2.6	Bentonite	45 kgs

Water Details

Water found at Depth	Kind of Water
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected	If no, provide reason:	Date Master Well Completed (yyyy/mm/dd)
☐ Yes ☑ No	Monitoring well	2010/03/02

Cluster Information *(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)*

Total Wells in Cluster	Please indicate Number of Cluster Well Information Log Sheets Submitted
5	
Total Wells on this Property	
unknown	1

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.

☑ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

Signature of Technician/Contractor	Date (yyyy/mm/dd)
	2010/04/21

Master Well Owner's/Land Owner's consent to use Cluster Form

Signature	Date (yyyy/mm/dd)
	2010/05/04

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
George Downing Estate Drilling	1814

Business Address (Street No./Name, number, RR)	Municipality
410 Rue Principale	Grenville Sur La Rouge

Province	Postal Code	Business E-mail Address
QC	J0V1B0	downing@hawk.igs.net

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
8199124261469	Downing, Bruce

Well Technician's Licence No.	Signature of Technician	Date Submitted (yyyy/mm/dd)
21123		2010/04/21

Ministry Use Only

Audit No.	Well Contractor No.
M 05578	
Date Received (yyyy/mm/dd)	Date of Inspection (yyyy/mm/dd)

Remarks

1992 (11/2006)

Well Owner's Copy

© Queen's Printer for Ontario, 2006

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)* A090429

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Property Owner's Information

First Name	Last Name	Mailing Address (Street No./Name, RR)	Municipality
Imperial Oil		90 Wynford Drive	Toronto

Province	Postal Code	E-mail Address	Telephone No. (inc. area code)
ONTARIO	M3C 1K5		4164417864

Consent

Property Owner's Consent to use cluster form

Signature: [signature] Date (yyyy/mm/dd): 2010/05/04

Consent to release additional information to the Director upon request

Signature of Technician/Contractor: [signature] Date (yyyy/mm/dd): 2010/04/01

Cluster Well Information

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
1545 Woodroffe Ave				

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation
Ottawa	Ontario		Garmin	Etrex	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify:

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
BH 8	18	445109	5020391	6.1	20	HSA	PVC	4.5	4.5	6.0	Bentonite				2010/03/01
BH 9	18	445112	5020391	7.6				5.8	5.8	7.3					
BH 10	18	445108	5020354	5.9				1.5	1.5	4.1					
BH 11	18	445074	5020351	5.9				3.0	3.0	5.9					

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd	410 Rue Principale	Grenville Sur La Rouge	QC

Postal Code	Business Telephone No. (inc. area code)	Well Contractor's Licence No.	Business E-mail Address
J0V 1B0	8192414649	1814	downing@hawk.igs.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted (yyyy/mm/dd)	Signature of Technician
	2173	2010/04/01	[signature]

Date 1st Well in Cluster Constructed (yyyy/mm/dd)	Date Last Well in Cluster Constructed (yyyy/mm/dd)
2010/03/01	2010/03/02

Ministry Use Only

Date Received (yyyy/mm/dd)	Date Inspected (yyyy/mm/dd)
Audit No. C 06197	**Remarks**

1991 (11/2006)

Well Owner's Copy

© Queen's Printer for Ontario, 2006

APPENDIX C

MAXXAM ANALYTICS LABORATORY CERTIFICATES OF ANALYSIS

Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 29069, 29070

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2010/04/19
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B025836
Received: 2010/03/04, 07:47

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	12	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	12	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	12	CAM SOP-00408	EPA 6010
MOISTURE	12	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 29069, 29070

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2010/04/19
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B025836
Received: 2010/03/04, 07:47

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

Encryption Key

Kudrat Cheema

19 Apr 2010 17:26:46 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

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

Total cover pages: 2

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		FF9403	FF9404		FF9405		FF9406		
Sampling Date		2010/03/01 15:00	2010/03/01 15:30		2010/03/01 14:15		2010/03/02 10:00		
COC Number		29069	29069		29069		29070		
	Units	**BH-8-6**	**BH-8-8**	**RDL**	**BH-10-3**	**RDL**	**BH-9-5**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	<0.02	0.02	<0.04	0.04	<0.02	0.02	2093951
Toluene	ug/g	<0.02	<0.02	0.02	<0.04	0.04	<0.02	0.02	2093951
Ethylbenzene	ug/g	<0.02	0.16	0.02	0.17	0.04	<0.02	0.02	2093951
o-Xylene	ug/g	<0.02	<0.02	0.02	<0.04	0.04	<0.02	0.02	2093951
p+m-Xylene	ug/g	<0.04	0.11	0.04	1.5	0.08	<0.04	0.04	2093951
Total Xylenes	ug/g	<0.04	0.11	0.04	1.5	0.08	<0.04	0.04	2093951
F1 (C6-C10)	ug/g	<10	<10	10	31	20	<10	10	2093951
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	29	20	<10	10	2093951
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	<20	20	<10	10	2095778
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	120	20	<10	10	2095778
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	120	20	<10	10	2095778
Reached Baseline at C50	ug/g	Yes	Yes		Yes		Yes		2095778
Extraction Surrogate Recovery (%)									
D10-Ethylbenzene	%	118	113		118		113		2093951
o-Terphenyl	%	104	97		105		100		2095778
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	98	98		97		100		2093951
4-Bromofluorobenzene	%	104	103		102		103		2093951
D4-1,2-Dichloroethane	%	111	109		82		109		2093951

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		FF9407	FF9408	FF9409	FF9410		
Sampling Date		2010/03/02 10:30	2010/03/02 11:00	2010/03/02 12:00	2010/03/02 14:00		
COC Number		29070	29070	29070	29070		
	Units	**BH-9-9**	**BH-10-4**	**QA11**	**BH-11-5**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2093951
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2093951
Ethylbenzene	ug/g	<0.02	<0.02	<0.02	0.49	0.02	2093951
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.10	0.02	2093951
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	0.22	0.04	2093951
Total Xylenes	ug/g	<0.04	<0.04	<0.04	0.32	0.04	2093951
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2093951
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2093951
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2095778
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2095778
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2095778
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2095778
Extraction Surrogate Recovery (%)							
D10-Ethylbenzene	%	95	116	115	121		2093951
o-Terphenyl	%	93	99	97	100		2095778
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	101	100	100	99		2093951
4-Bromofluorobenzene	%	105	104	104	105		2093951
D4-1,2-Dichloroethane	%	109	109	110	110		2093951

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		FF9410	FF9411	FF9412	FF9413		
Sampling Date		2010/03/02 14:00	2010/03/02 14:30	2010/03/02 15:00	2010/03/03 10:00		
COC Number		29070	29070	29070	29070		
	Units	**BH-11-5 Lab-Dup**	**BH-11-7**	**BH-11-8**	**BH-12-4**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	<0.02	<0.02	0.15	0.02	2093951
Toluene	ug/g	<0.02	<0.02	<0.02	2.4	0.02	2093951
Ethylbenzene	ug/g	0.54	<0.02	<0.02	2.1	0.02	2093951
o-Xylene	ug/g	0.16	<0.02	<0.02	4.1	0.02	2093951
p+m-Xylene	ug/g	0.56 (1)	0.08	<0.04	8.5	0.04	2093951
Total Xylenes	ug/g	0.72 (1)	0.08	<0.04	13	0.04	2093951
F1 (C6-C10)	ug/g	18	<10	<10	77	10	2093951
F1 (C6-C10) - BTEX	ug/g	17	<10	<10	60	10	2093951
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	81	10	2095778
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	28	10	2095778
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2095778
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2095778
Extraction Surrogate Recovery (%)							
D10-Ethylbenzene	%	117	115	113	117		2093951
o-Terphenyl	%	100	88	92	95		2095778
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	97	99	98	98		2093951
4-Bromofluorobenzene	%	103	104	104	103		2093951
D4-1,2-Dichloroethane	%	109	110	110	107		2093951

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Duplicate results exceeded RPD acceptance criteria. The variability in the results for this analyte may be more pronounced

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		FF9414		
Sampling Date		2010/03/03 10:15		
COC Number		29070		
	Units	**BH-12-8**	**RDL**	**QC Batch**
Benzene	ug/g	0.14	0.02	2093951
Toluene	ug/g	0.46	0.02	2093951
Ethylbenzene	ug/g	0.34	0.02	2093951
o-Xylene	ug/g	0.29	0.02	2093951
p+m-Xylene	ug/g	0.87	0.04	2093951
Total Xylenes	ug/g	1.2	0.04	2093951
F1 (C6-C10)	ug/g	14	10	2093951
F1 (C6-C10) - BTEX	ug/g	12	10	2093951
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	2095778
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	2095778
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	2095778
Reached Baseline at C50	ug/g	Yes		2095778
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	110		2093951
o-Terphenyl	%	89		2095778
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	98		2093951
4-Bromofluorobenzene	%	102		2093951
D4-1,2-Dichloroethane	%	109		2093951

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

LEAD IN SOIL (SOIL)

Maxxam ID		FF9403	FF9404	FF9405	FF9406		
Sampling Date		2010/03/01 15:00	2010/03/01 15:30	2010/03/01 14:15	2010/03/02 10:00		
COC Number		29069	29069	29069	29070		
	Units	**BH-8-6**	**BH-8-8**	**BH-10-3**	**BH-9-5**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	7	7	13	<5	5	2095942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FF9407		FF9408		FF9409		
Sampling Date		2010/03/02 10:30		2010/03/02 11:00		2010/03/02 12:00		
COC Number		29070		29070		29070		
	Units	**BH-9-9**	**QC Batch**	**BH-10-4**	**QC Batch**	**QA11**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	7	2095942	<5	2096623	7	5	2095942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FF9410	FF9410		FF9411	FF9412		
Sampling Date		2010/03/02 14:00	2010/03/02 14:00		2010/03/02 14:30	2010/03/02 15:00		
COC Number		29070	29070		29070	29070		
	Units	**BH-11-5**	**BH-11-5 Lab-Dup**	**QC Batch**	**BH-11-7**	**BH-11-8**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	5	8	2096623	6	<5	5	2095942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

LEAD IN SOIL (SOIL)

Maxxam ID		FF9413	FF9414		
Sampling Date		2010/03/03 10:00	2010/03/03 10:15		
COC Number		29070	29070		
	Units	**BH-12-4**	**BH-12-8**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5	<5	5	2095942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FF9403	FF9404	FF9405	FF9406	FF9407		
Sampling Date		2010/03/01 15:00	2010/03/01 15:30	2010/03/01 14:15	2010/03/02 10:00	2010/03/02 10:30		
COC Number		29069	29069	29069	29070	29070		
	Units	**BH-8-6**	**BH-8-8**	**BH-10-3**	**BH-9-5**	**BH-9-9**	**RDL**	**QC Batch**
Moisture	%	19	19	53	18	15	0.2	2094837

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FF9408	FF9409	FF9410	FF9411	FF9412		
Sampling Date		2010/03/02 11:00	2010/03/02 12:00	2010/03/02 14:00	2010/03/02 14:30	2010/03/02 15:00		
COC Number		29070	29070	29070	29070	29070		
	Units	**BH-10-4**	**QA11**	**BH-11-5**	**BH-11-7**	**BH-11-8**	**RDL**	**QC Batch**
Moisture	%	23	20	30	14	15	0.2	2094837

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FF9413	FF9414		
Sampling Date		2010/03/03 10:00	2010/03/03 10:15		
COC Number		29070	29070		
	Units	**BH-12-4**	**BH-12-8**	**RDL**	**QC Batch**
Moisture	%	12	13	0.2	2094837

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Test Summary

Maxxam ID FF9403 **Collected** 2010/03/01
Sample ID BH-8-6 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9404 **Collected** 2010/03/01
Sample ID BH-8-8 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9405 **Collected** 2010/03/01
Sample ID BH-10-3 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9406 **Collected** 2010/03/02
Sample ID BH-9-5 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/09	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9407 **Collected** 2010/03/02
Sample ID BH-9-9 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/08	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/09	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Test Summary

Maxxam ID FF9408 **Collected** 2010/03/02
Sample ID BH-10-4 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/09	ZZ
Total Metals Analysis by ICP	ICP	2096623	2010/03/10	2010/03/10	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9409 **Collected** 2010/03/02
Sample ID QA11 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/09	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9410 **Collected** 2010/03/02
Sample ID BH-11-5 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/09	ZZ
Total Metals Analysis by ICP	ICP	2096623	2010/03/10	2010/03/10	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9410 Dup **Collected** 2010/03/02
Sample ID BH-11-5 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/05	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2096623	2010/03/10	2010/03/10	APT

Maxxam ID FF9411 **Collected** 2010/03/02
Sample ID BH-11-7 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Test Summary

Maxxam ID FF9412 **Collected** 2010/03/02
Sample ID BH-11-8 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9413 **Collected** 2010/03/03
Sample ID BH-12-4 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam ID FF9414 **Collected** 2010/03/03
Sample ID BH-12-8 **Shipped** 2010/03/03
Matrix Soil **Received** 2010/03/04

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2093951	2010/03/04	2010/03/06	GRU
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2095778	2010/03/09	2010/03/10	ZZ
Total Metals Analysis by ICP	ICP	2095942	2010/03/09	2010/03/09	APT
MOISTURE	BAL	2094837	N/A	2010/03/08	FOT

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025836
Report Date: 2010/04/19

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Package 1	1.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Revised report: As per client request sample QA10, BH-101-4,
BH-101-7, BH-101-8, BH-102-3 and BH-102-7 are excluded from this report.

Sample ID on the C of C was indicated as BH8-5 however, sample with ID BH8-6 was received in the shipment.
Sample ID on the C of C was indicated as QA11 however, sample with ID QA10 was received in the shipment.

Sample FF9405-01: F1BTEX and F2-F4 Analyses: Detection limits were adjusted for high moisture content.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B025836

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2093951	GRU	Method Blank	1,4-Difluorobenzene	2010/03/05		98	%	60 - 140
			4-Bromofluorobenzene	2010/03/05		104	%	60 - 140
			D10-Ethylbenzene	2010/03/05		108	%	30 - 130
			D4-1,2-Dichloroethane	2010/03/05		108	%	60 - 140
			Benzene	2010/03/05	<0.02		ug/g	
			Toluene	2010/03/05	<0.02		ug/g	
			Ethylbenzene	2010/03/05	<0.02		ug/g	
			o-Xylene	2010/03/05	<0.02		ug/g	
			p+m-Xylene	2010/03/05	<0.04		ug/g	
			Total Xylenes	2010/03/05	<0.04		ug/g	
			F1 (C6-C10)	2010/03/05	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/03/05	<10		ug/g	
2095778	ZZ	Method Blank	o-Terphenyl	2010/03/09		103	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/09	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/03/09	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/03/09	<10		ug/g	
2095942	APT	Method Blank	Acid Extractable Lead (Pb)	2010/03/09	<5		ug/g	
2096623	APT	Method Blank	Acid Extractable Lead (Pb)	2010/03/10	<5		ug/g	
2093951	GRU	RPD [FF9410-02]	Benzene	2010/03/05	NC		%	50
			Toluene	2010/03/05	NC		%	50
			Ethylbenzene	2010/03/05	8.8		%	50
			o-Xylene	2010/03/05	NC		%	50
			p+m-Xylene	2010/03/05	87.2 (1)		%	50
			Total Xylenes	2010/03/05	77.4 (1)		%	50
			F1 (C6-C10)	2010/03/05	NC		%	50
			F1 (C6-C10) - BTEX	2010/03/05	NC		%	50
2095778	ZZ	RPD [FF9410-02]	F2 (C10-C16 Hydrocarbons)	2010/03/10	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/03/10	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/03/10	NC		%	50
2096623	APT	RPD [FF9410-01]	Acid Extractable Lead (Pb)	2010/03/10	NC		%	35
2093951	GRU	Matrix Spike [FF9410-02]	1,4-Difluorobenzene	2010/03/05		96	%	60 - 140
			4-Bromofluorobenzene	2010/03/05		103	%	60 - 140
			D10-Ethylbenzene	2010/03/05		116	%	30 - 130
			D4-1,2-Dichloroethane	2010/03/05		108	%	60 - 140
			Benzene	2010/03/05		90	%	60 - 140
			Toluene	2010/03/05		94	%	60 - 140
			Ethylbenzene	2010/03/05		100	%	60 - 140
			o-Xylene	2010/03/05		113	%	60 - 140
			p+m-Xylene	2010/03/05		105	%	60 - 140
			F1 (C6-C10)	2010/03/05		112	%	60 - 140
2095778	ZZ	Matrix Spike [FF9410-02]	o-Terphenyl	2010/03/09		102	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/09		89	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/03/09		89	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/03/09		89	%	60 - 130
2096623	APT	Matrix Spike [FF9410-01]	Acid Extractable Lead (Pb)	2010/03/10		103	%	75 - 125
2093951	GRU	LCS	1,4-Difluorobenzene	2010/03/05		97	%	60 - 140
			4-Bromofluorobenzene	2010/03/05		103	%	60 - 140
			D10-Ethylbenzene	2010/03/05		127	%	30 - 130
			D4-1,2-Dichloroethane	2010/03/05		110	%	60 - 140
			Benzene	2010/03/05		98	%	60 - 140
			Toluene	2010/03/05		102	%	60 - 140
			Ethylbenzene	2010/03/05		114	%	60 - 140

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B025836

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2093951	GRU	LCS	o-Xylene	2010/03/05		121	%	60 - 140
			p+m-Xylene	2010/03/05		111	%	60 - 140
			F1 (C6-C10)	2010/03/05		80	%	60 - 140
2095778	ZZ	LCS	o-Terphenyl	2010/03/09		100	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/09		85	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/03/09		85	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/03/09		85	%	60 - 130
2095942	APT	SRM	Acid Extractable Lead (Pb)	2010/03/09		106	%	75 - 125
2096623	APT	SRM	Acid Extractable Lead (Pb)	2010/03/10		107	%	75 - 125

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.
SRM: A blank matrix sample to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
LCS: A blank matrix sample 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) Duplicate results exceeded RPD acceptance criteria. The variability in the results for this analyte may be more pronounced

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

DATA QUALITY WAIVER

2010/03/11 5:36 PM

Invoice Client Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole
Invoice Client ID #: 2209
Invoice Project Manager: Lorne Wedge

Report To Client Name: O'Connor Associates Environmental In
Report To Client ID #: 10094
Report To Project Manager: Nancy Haywood

Maxxam Project Manager: EMA GITEJ

Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Client Project #: 10-8518T02
Task #: 11064640
Quote: A85084
COC/Submission #: 29069

TAT: 7 Days
Rush: No

Maxxam Job #: B025836

Received By: JIMMY LIU
Received: 2010/03/04 07:47

DQW #: 810
DQW Created By: EMA GITEJ
DQW Created: 2010/03/11 16:32

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
FF9410	BH-11-5	Soil	F1BTEXHS-S	F1BTEX	p+m-Xylene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
FF9410	BH-11-5	Soil	F1BTEXHS-S	F1BTEX	Total Xylenes	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.

Waiver Issued By:
Signature: Ema Gitej **Date:** 2010/03/11 16:42
Name: EMA GITEJ
Title: Project Manager

Data Quality Waiver Reviewed and Accepted By:
Signature: NHay **Date:** Mar 23/10
Name: Nancy Haywood
Title: ~~PROJECT~~ PROJECT MANAGER

Data Quality Waiver Reviewed and Declined By:
Signature: _____ **Date:** _____
Name: _____
Title: _____

Comments / Requested Actions:

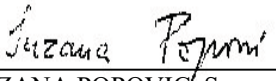
If this waiver is not returned within 14 calendar days of issuance, the associated data will be deemed acceptable as reported by the issuing laboratory. Closure of the Data Quality Waiver Request requires written acceptance, or declining with comments. Failure to return a signed waiver within 14 calendar days will be reported to Imperial Oil as a failure to close the Data Quality Waiver Request by the recipient of the data.

Validation Signature Page

Maxxam Job #: B025836

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

BRAD NEWMAN, Scientific Specialist



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics Inc

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 2

C of C # 29069

COMPANY NAME: O'CONNOR ASS.	PH #: 613 742 1781 FAX #: 613 742 6064
COMPANY ADDRESS: 5420 CANOTEK ROAD OTTAWA ONT K1J 1E9	CLIENT PROJECT ID: (#) 10-8518T02
SAMPLER NAME (PRINT): C. RAHMER	PROJECT MANAGER: N. HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	GRAIN SIZE	PH
1	QA-10	FF9397	Soil	3	10/03/01	10:00	X	X	X					X		- 120 JAR ONLY 1/2 FULL (LTD RECOVERY)										
2	BH-101-4	FF9398	Soil	3	10/03/01	10:15	X	X	X					X											X	X
3	BH-101-7	FF9399	Soil	3	10/03/01	10:30	X	X	X					X											X	X
4	BH-101-8	FF9400	Soil	3	10/03/01	11:00	X	X	X					X												
5	BH-102-5	FF9401	Soil	3	10/03/01	14:00	X	X	X					X												
6	BH-102-7	FF9402	Soil	3	10/03/01	14:30	X	X	X					X												
7	BH-8-5	FF9403	Soil	3	10/03/01	15:00	X	X	X					X												
8	BH-8-8	FF9404	Soil	3	10/03/01	15:30	X	X	X					X												
9	BH-10-3	FF9405	Soil	3	10/03/01	14:15	X	X	X					X												
10	~~[illegible]~~		~~[illegible]~~				~~[illegible]~~							~~X~~	- OMIT LINE 10											

LTD SAMPLE RECOVERY PLEASE RUN THESE IF POSSIBLE

PST SIEV

IOL SITE LOCATION: 1545 WOODROFFE AVE OTTAWA ONT.	REGULATORY CRITERIA / DETECTION LIMITS: Q REG 153/04 TABLE 3	SPECIAL INSTRUCTIONS: DIFFICULT TO ACHIEVE 0 HEADSPACE ITEMS 3/4/6/8	MAXXAM JOB #: B025836
MAXXAM TASK ORDER #: 1106464Ø		PH + GRAIN SIZE ON ITEMS 2+3 IF POSS. LTD SAMPLE	SAMPLES ENTERED BY: 7L / AP
IOL CONTACT: L. WEDGE		OMIT LINE 10	

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 1/2/2°C	AVG YES	TEMP	AVG	TEMP	AVG

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
C. Rahmer	Mar 3 '10	2pm	Zofia ZOFIA ZEMITA	10/03/04	7:47

TURNAROUND TIMES

SOIL/WATER			AIR - SUMMA CANISTERS		
Standard	(5 days)	☒	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics Inc
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 29070

COMPANY NAME: O'CONNOR ASS.
PH #: 613 742 1781
FAX #: 613 742 6064
COMPANY ADDRESS: 5420 CANOTEK RD. OTTAWA ONT K1J 1E9
CLIENT PROJECT ID: (#) 10-8518 T02
SAMPLER NAME (PRINT): C. RAHMER
PROJECT MANAGER: N. HAYWOOD

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH-9-5	FF9406	SOIL	3	10/03/02	10:00	X	X	X					X										
2	BH-9-9	FF9407	SOIL	3	10/03/02	10:30	X	X	X					X										
3	BH-10-4	FF9408	SOIL	3	10/03/02	11:00	X	X	X					X										
4	QA-11	FF9409	SOIL	3	10/03/02	12:00	X	X	X					X		-	120	yr PARTIALLY FILLED (LTD. RECOVERY)						
5	BH-11-5	FF9410	SOIL	3	10/03/02	14:00	X	X	X					X										
6	BH-11-7	FF9411	SOIL	3	10/03/02	14:30	X	X	X					X										
7	BH-11-8	FF9412	SOIL	3	10/03/02	15:00	X	X	X					X			1D = BH-11-8 (ELEVEN)							
8	BH-12-4	FF9413	SOIL	3	10/03/03	10:00	X	X	X					X										
9	BH-12-8	FF9414	SOIL	3	10/03/03	10:15	X	X	X					X										
10																								

IOL SITE LOCATION: 1545 WOODROFFE AVE OTTAWA ONT
REGULATORY CRITERIA / DETECTION LIMITS: O REG. 153/04 TABLE 3
SPECIAL INSTRUCTIONS: ITEM # 2 VERY WET DIFFICULT TO SEAL + ACHIEVE 0 HEADSPACE (SAME FOR ITEMS 7 AND 9 (VERY WET / WATER TOP OF JAR))
MAXXAM JOB #: B025836
MAXXAM TASK ORDER #: 1196404-0
IOL CONTACT: L. WEDGER
SAMPLES ENTERED BY: ZL / AP

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
TEMP 1/2/2°C	AVG YES	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER			AIR – SUMMA CANISTERS		
Standard	(5 days)	X	Standard	(15 days)	☐
Rush	(3 days)	☐	Rush	(9 days)	☐
	(2 days)	☐		(6 days)	☐
	(1 day)	☐		(3 days)	☐
	(same day)	☐			

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
C. Rahmer	Mar 3 '10	2pm	Zofia	10/03/04	7:47
			ZOFIA ZEMBA		

IOL COC-ONTARIO-10/05 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *1-Mar-10 to 3-Mar-10*

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory : *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Sample Submission Number: *B025836*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*The matrix duplicate RPD is above the acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD		*X*		
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC have met acceptance criteria.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *Yes*

Date Issued: *11-Mar-10* Date of Response: *23-Mar-10*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N. Haywood* Data Reviewed by (Signature):

Review Date: *5-Apr-10*

Revision Date (if applicable): *19-Apr-10* Revised by (Signature):

Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02
Your C.O.C. #: 34829

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2010/03/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B031772
Received: 2010/03/17, 11:10

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	8	CAM SOP-00315	CCME CWS
F1 + F2 Calculation	8	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	8	CAM SOP-00316	CCME Hydrocarbons
F3 + F4 Calculation	8	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	8	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02
Your C.O.C. #: 34829

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2010/03/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B031772
Received: 2010/03/17, 11:10

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

Encryption Key

Ema Gitej

23 Mar 2010 17:38:23 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

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

Total cover pages: 2

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		FI8155	FI8156		FI8157		
Sampling Date		2010/03/16 10:00	2010/03/16 10:15		2010/03/16 10:30		
COC Number		34829	34829		34829		
	Units	**BH5**	**BH6**	**RDL**	**BH7**	**RDL**	**QC Batch**
Benzene	ug/L	<4	450	4	<0.2	0.2	2104687
Toluene	ug/L	9	47	4	<0.2	0.2	2104687
Ethylbenzene	ug/L	2800	1500	4	<0.2	0.2	2104687
o-Xylene	ug/L	290	240	4	<0.2	0.2	2104687
p+m-Xylene	ug/L	9300	3300	8	0.6	0.4	2104687
Total Xylenes	ug/L	9600	3500	8	0.6	0.4	2104687
F1 (C6-C10)	ug/L	24000	11000	2000	<100	100	2104687
F1 (C6-C10) - BTEX	ug/L	11000	5600	2000	<100	100	2104687
F2 (C10-C16 Hydrocarbons)	ug/L	4900	650	100	<100	100	2104120
F3 (C16-C34 Hydrocarbons)	ug/L	240	2100	100	<100	100	2104120
F4 (C34-C50 Hydrocarbons)	ug/L	<100	730	100	<100	100	2104120
Reached Baseline at C50	ug/L	Yes	Yes		Yes		2104120
F1 + F2	ug/L	16000	6300	2000	<100	100	2102282
F3 + F4	ug/L	240	2800	100	<100	100	2102283
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	95	94		92		2104120
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	102	102		99		2104687
4-Bromofluorobenzene	%	99	96		95		2104687
D10-Ethylbenzene	%	102	96		95		2104687
D4-1,2-Dichloroethane	%	87	94		94		2104687

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		FI8158		FI8159	FI8159	FI8160		
Sampling Date		2010/03/16 10:45		2010/03/16 11:00	2010/03/16 11:00	2010/03/16 11:15		
COC Number		34829		34829	34829	34829		
	Units	**BH8**	**RDL**	**BH9**	**BH9 Lab-Dup**	**BH11**	**RDL**	**QC Batch**
Benzene	ug/L	140	0.4	<0.2	<0.2	0.7	0.2	2104687
Toluene	ug/L	10	0.4	0.9	1.0	14	0.2	2104687
Ethylbenzene	ug/L	610	0.4	<0.2	<0.2	20	0.2	2104687
o-Xylene	ug/L	34	0.4	<0.2	<0.2	32	0.2	2104687
p+m-Xylene	ug/L	130	0.8	<0.4	<0.4	170	0.4	2104687
Total Xylenes	ug/L	160	0.8	<0.4	<0.4	200	0.4	2104687
F1 (C6-C10)	ug/L	1800	200	<100	<100	1100	100	2104687
F1 (C6-C10) - BTEX	ug/L	910	200	<100	<100	850	100	2104687
F2 (C10-C16 Hydrocarbons)	ug/L	460	100	<100		460	100	2104120
F3 (C16-C34 Hydrocarbons)	ug/L	<100	100	<100		<100	100	2104120
F4 (C34-C50 Hydrocarbons)	ug/L	110	100	<100		<100	100	2104120
Reached Baseline at C50	ug/L	Yes		Yes		Yes		2104120
F1 + F2	ug/L	1400	200	<100		1300	100	2102282
F3 + F4	ug/L	110	100	<100		<100	100	2102283
Extraction Surrogate Recovery (%)								
o-Terphenyl	%	93		93		93		2104120
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene	%	102		102	98	100		2104687
4-Bromofluorobenzene	%	98		96	95	99		2104687
D10-Ethylbenzene	%	101		90	83	92		2104687
D4-1,2-Dichloroethane	%	89		95	89	89		2104687

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		FI8160		FI8161	FI8162		
Sampling Date		2010/03/16 11:15		2010/03/16 11:30	2010/03/16 11:30		
COC Number		34829		34829	34829		
	Units	**BH11 Lab-Dup**	**RDL**	**BH12**	**QA1**	**RDL**	**QC Batch**
Benzene	ug/L		0.2	1500	1400	1	2104687
Toluene	ug/L		0.2	230	220	1	2104687
Ethylbenzene	ug/L		0.2	670	630	1	2104687
o-Xylene	ug/L		0.2	94	87	1	2104687
p+m-Xylene	ug/L		0.4	200	180	2	2104687
Total Xylenes	ug/L		0.4	290	270	2	2104687
F1 (C6-C10)	ug/L		100	5400	5300	500	2104687
F1 (C6-C10) - BTEX	ug/L		100	2700	2800	500	2104687
F2 (C10-C16 Hydrocarbons)	ug/L	440	100	1000	1100	100	2104120
F3 (C16-C34 Hydrocarbons)	ug/L	<100	100	<100	<100	100	2104120
F4 (C34-C50 Hydrocarbons)	ug/L	<100	100	<100	<100	100	2104120
Reached Baseline at C50	ug/L	Yes		Yes	Yes		2104120
F1 + F2	ug/L		100	3700	3900	500	2102282
F3 + F4	ug/L	<100	100	<100	<100	100	2102283
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	92		94	93		2104120
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%			104	102		2104687
4-Bromofluorobenzene	%			103	99		2104687
D10-Ethylbenzene	%			109	92		2104687
D4-1,2-Dichloroethane	%			93	91		2104687

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		FI8155	FI8155	FI8156	FI8157	FI8158	FI8159		
Sampling Date		2010/03/16 10:00	2010/03/16 10:00	2010/03/16 10:15	2010/03/16 10:30	2010/03/16 10:45	2010/03/16 11:00		
COC Number		34829	34829	34829	34829	34829	34829		
	Units	**BH5**	**BH5 Lab-Dup**	**BH6**	**BH7**	**BH8**	**BH9**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2105933

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam ID		FI8160	FI8161	FI8162		
Sampling Date		2010/03/16 11:15	2010/03/16 11:30	2010/03/16 11:30		
COC Number		34829	34829	34829		
	Units	**BH11**	**BH12**	**QA1**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	<0.5	<0.5	0.5	2105933

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

Test Summary

Maxxam ID FI8155 **Collected** 2010/03/16
Sample ID BH5 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/22	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam ID FI8155 Dup **Collected** 2010/03/16
Sample ID BH5 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam ID FI8156 **Collected** 2010/03/16
Sample ID BH6 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/19	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam ID FI8157 **Collected** 2010/03/16
Sample ID BH7 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/20	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam ID FI8158 **Collected** 2010/03/16
Sample ID BH8 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/23	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

Test Summary

Maxxam ID FI8159 **Collected** 2010/03/16
Sample ID BH9 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/19	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam ID FI8159 Dup **Collected** 2010/03/16
Sample ID BH9 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/19	JXI

Maxxam ID FI8160 **Collected** 2010/03/16
Sample ID BH11 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/22	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam ID FI8160 Dup **Collected** 2010/03/16
Sample ID BH11 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC

Maxxam ID FI8161 **Collected** 2010/03/16
Sample ID BH12 **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/22	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

Test Summary

Maxxam ID FI8162
Sample ID QA1
Matrix Water

Collected 2010/03/16
Shipped 2010/03/16
Received 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2104687	N/A	2010/03/22	JXI
F1 + F2 Calculation		2102282	N/A	2010/03/23	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2104120	2010/03/18	2010/03/19	NCI
F3 + F4 Calculation		2102283	N/A	2010/03/23	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam Job #: B031772
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

Package 1	2.0°C
Package 2	1.7°C
Package 3	2.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

For sample BH7 (FI8157):
- 1 x 1L amber glass bottle for F4G contains 1.8 cm of sediment.
- 1 of 2 x 500mL amber glass bottle for F2-F4 contains 1.3 cm of sediment.
- 2nd of 2 x 500mL amber glass bottle for F2-F4 contains 1.2 cm of sediment.

For sample BH11 (FI8160):
- 1 x 1L amber glass bottle for F4G contains 1.3 cm of sediment.

Sample FI8155-01: F1-BTEX Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B031772

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2104120	NCI	Method Blank	o-Terphenyl	2010/03/19		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/19	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2010/03/19	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2010/03/19	<100		ug/L	
2104687	JXI	Method Blank	1,4-Difluorobenzene	2010/03/19		99	%	70 - 130
			4-Bromofluorobenzene	2010/03/19		92	%	70 - 130
			D10-Ethylbenzene	2010/03/19		93	%	70 - 130
			D4-1,2-Dichloroethane	2010/03/19		92	%	70 - 130
			Benzene	2010/03/19	<0.2		ug/L	
			Toluene	2010/03/19	<0.2		ug/L	
			Ethylbenzene	2010/03/19	<0.2		ug/L	
			o-Xylene	2010/03/19	<0.2		ug/L	
			p+m-Xylene	2010/03/19	<0.4		ug/L	
			Total Xylenes	2010/03/19	<0.4		ug/L	
			F1 (C6-C10)	2010/03/19	<100		ug/L	
			F1 (C6-C10) - BTEX	2010/03/19	<100		ug/L	
2105933	HRE	Method Blank	Dissolved Lead (Pb)	2010/03/22	<0.5		ug/L	
		RPD [FI8155-03]	Dissolved Lead (Pb)	2010/03/22	NC		%	25
2104687	JXI	RPD [FI8159-04]	Benzene	2010/03/19	NC		%	40
			Toluene	2010/03/19	NC		%	40
			Ethylbenzene	2010/03/19	NC		%	40
			o-Xylene	2010/03/19	NC		%	40
			p+m-Xylene	2010/03/19	NC		%	40
			Total Xylenes	2010/03/19	NC		%	40
			F1 (C6-C10)	2010/03/19	NC		%	40
			F1 (C6-C10) - BTEX	2010/03/19	NC		%	40
2104120	NCI	RPD [FI8160-02]	F2 (C10-C16 Hydrocarbons)	2010/03/19	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/03/19	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/03/19	NC		%	50
		Matrix Spike [FI8159-02]	o-Terphenyl	2010/03/23		94	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/23		83	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/03/23		83	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/03/23		83	%	60 - 130
2104687	JXI	Matrix Spike [FI8159-04]	1,4-Difluorobenzene	2010/03/23		101	%	70 - 130
			4-Bromofluorobenzene	2010/03/23		95	%	70 - 130
			D10-Ethylbenzene	2010/03/23		91	%	70 - 130
			D4-1,2-Dichloroethane	2010/03/23		89	%	70 - 130
			Benzene	2010/03/23		85	%	70 - 130
			Toluene	2010/03/23		98	%	70 - 130
			Ethylbenzene	2010/03/23		101	%	70 - 130
			o-Xylene	2010/03/23		101	%	70 - 130
			p+m-Xylene	2010/03/23		99	%	70 - 130
			F1 (C6-C10)	2010/03/23		97	%	70 - 130
2105933	HRE	Matrix Spike [FI8155-03]	Dissolved Lead (Pb)	2010/03/22		94	%	80 - 120
2104120	NCI	LCS	o-Terphenyl	2010/03/23		98	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/23		89	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/03/23		89	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/03/23		89	%	60 - 130
2104687	JXI	LCS	1,4-Difluorobenzene	2010/03/23		102	%	70 - 130
			4-Bromofluorobenzene	2010/03/23		98	%	70 - 130
			D10-Ethylbenzene	2010/03/23		101	%	70 - 130
			D4-1,2-Dichloroethane	2010/03/23		91	%	70 - 130

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA ON
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B031772

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2104687	JXI	LCS	Benzene	2010/03/23		88	%	70 - 130
			Toluene	2010/03/23		95	%	70 - 130
			Ethylbenzene	2010/03/23		97	%	70 - 130
			o-Xylene	2010/03/23		105	%	70 - 130
			p+m-Xylene	2010/03/23		96	%	70 - 130
			F1 (C6-C10)	2010/03/23		96	%	70 - 130
2105933	HRE	LCS	Dissolved Lead (Pb)	2010/03/22		99	%	90 - 110

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.
LCS: A blank matrix sample 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.

Validation Signature Page

Maxxam Job #: B031772

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

MAMDOUH SALIB, Analyst, Hydrocarbons

==========

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

Maxxam Analytics
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 34829

COMPANY NAME: O'Connor Associates (OA)	PH #: 613. 742. 1781
	FAX #: 613. 742. 6064
COMPANY ADDRESS: 5420 Canotek Rd. Ottawa, ON K1J 1E9	CLIENT PROJECT ID: (#) 10-851BT02
SAMPLER NAME (PRINT): Chris Rahmer	PROJECT MANAGER: Nancy Haywood

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	Henry Silt Analyze as Requested
1	BH5	FI8155	WATER	8	10/03/16	10:00	X	X	X					X											
2	BH6	FI8156	WATER	8	10/03/16	10:15	X	X	X					X											X
3	BH7	FI8157	WATER	8	10/03/16	10:30	X	X	X					X											X
4	BH8	FI8158	WATER	8	10/03/16	10:45	X	X	X					X											
5	BH9	FI8159	WATER	8	10/03/16	11:00	X	X	X					X											
6	BH11	FI8160	WATER	8	10/03/16	11:15	X	X	X					X											
7	BH12	FI8161	WATER	8	10/03/16	11:30	X	X	X					X											
8	QA1	FI8162	WATER	3	10/03/16	11:30	X	X	X					X											
9																									
10																									

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa	REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3	SPECIAL INSTRUCTIONS: - EDT - handle as per TOR
MAXXAM TASK ORDER #: 11064640		MAXXAM JOB #: B031772
IOL CONTACT: Lorne Nedge		SAMPLES ENTERED BY: PNC/ABM

COOLER ID 1 CUSTODY SEAL YES	COOLER ID 2 CUSTODY SEAL YES	COOLER ID 3 CUSTODY SEAL YES
TEMP 1/2/3°C AVG	TEMP 2/1/2°C AVG	TEMP 2/3/2°C AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard	(5 days) ☒	Standard	(15 days) ☐
Rush	(3 days) ☐	Rush	(9 days) ☐
	(2 days) ☐		(6 days) ☐
	(1 day) ☐		(3 days) ☐
	(same day) ☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
[signature] IanMurray	2016/03/16	16:00	JIMMY LIU	10/03/17	11:10

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *16-Mar-10*

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory : *Maxxam Mississauga*

Consultant Project Number: *10-8518T02* Sample Submission Number: *B031772*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance critera.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC have met acceptance criteria*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *na* Date of Response: *na*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N. Haywood* Data Reviewed by (Signature):

Review Date: *5-Apr-10*

Revision Date (if applicable): *19-Apr-10* Revised by (Signature):

Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 34828

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2010/03/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B031836
Received: 2010/03/17, 11:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
F1 + F2 Calculation	2	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
F3 + F4 Calculation	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All BTEX samples were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 34828

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2010/03/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B031836
Received: 2010/03/17, 11:10

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

Encryption Key

Ema Gitej

23 Mar 2010 14:37:22 -04:00

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

EMA GITEJ, Project Manager
Email: ema.gitej@maxxamanalytics.com
Phone# (905) 817-5700

==========

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

Total cover pages: 2

Maxxam Job #: B031836
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		FI8370	FI8371		
Sampling Date		2010/03/16 09:00	2010/03/16 09:15		
COC Number		34828	34828		
	Units	**TRIP BLANK**	**FIELD BLANK**	**RDL**	**QC Batch**
Benzene	ug/L	<0.2	<0.2	0.2	2103056
Toluene	ug/L	<0.2	<0.2	0.2	2103056
Ethylbenzene	ug/L	<0.2	<0.2	0.2	2103056
o-Xylene	ug/L	<0.2	<0.2	0.2	2103056
p+m-Xylene	ug/L	<0.4	<0.4	0.4	2103056
Total Xylenes	ug/L	<0.4	<0.4	0.4	2103056
F1 (C6-C10)	ug/L	<100	<100	100	2103056
F1 (C6-C10) - BTEX	ug/L	<100	<100	100	2103056
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	2103070
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	2103070
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	2103070
Reached Baseline at C50	ug/L	Yes	Yes		2103070
F1 + F2	ug/L	<100	<100	100	2102282
F3 + F4	ug/L	<100	<100	100	2102283
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	103	103		2103070
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	109	107		2103056
4-Bromofluorobenzene	%	91	92		2103056
D10-Ethylbenzene	%	89	77		2103056
D4-1,2-Dichloroethane	%	101	102		2103056

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B031836
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

BTEX IN WATER (WATER)

Maxxam ID		FI8369		
Sampling Date		2010/03/01 13:00		
COC Number		34828		
	Units	**TRIP SPIKE**	**RDL**	**QC Batch**
Benzene	ug/L	89	0.2	2103056
Toluene	ug/L	91	0.2	2103056
Ethylbenzene	ug/L	88	0.2	2103056
o-Xylene	ug/L	90	0.2	2103056
p+m-Xylene	ug/L	86	0.4	2103056
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	108		2103056
4-Bromofluorobenzene	%	90		2103056
D10-Ethylbenzene	%	89		2103056
D4-1,2-Dichloroethane	%	100		2103056

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B031836
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		FI8370	FI8371		
Sampling Date		2010/03/16 09:00	2010/03/16 09:15		
COC Number		34828	34828		
	Units	**TRIP BLANK**	**FIELD BLANK**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	<0.5	0.5	2105933

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B031836
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Test Summary

Maxxam ID FI8369 **Collected** 2010/03/01
Sample ID TRIP SPIKE **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2103056	N/A	2010/03/18	GRU

Maxxam ID FI8370 **Collected** 2010/03/16
Sample ID TRIP BLANK **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2103056	N/A	2010/03/18	GRU
F1 + F2 Calculation		2102282	N/A	2010/03/22	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2103070	2010/03/18	2010/03/18	RGA
F3 + F4 Calculation		2102283	N/A	2010/03/22	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam ID FI8371 **Collected** 2010/03/16
Sample ID FIELD BLANK **Shipped** 2010/03/16
Matrix Water **Received** 2010/03/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2103056	N/A	2010/03/18	GRU
F1 + F2 Calculation		2102282	N/A	2010/03/22	ASC
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2103070	2010/03/18	2010/03/18	RGA
F3 + F4 Calculation		2102283	N/A	2010/03/22	ASC
Dissolved Metals by ICPMS	ICP/MS	2105933	N/A	2010/03/22	HRE

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B031836
Report Date: 2010/03/23

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample FI8369-01: Trip spike results are expressed as percentage of the spiked amounts.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: R11995
Site Location: 1545 WOODROFFE AVE, OTTAWA, ON
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B031836

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2103056	GRU	Method Blank	1,4-Difluorobenzene	2010/03/17		109	%	70 - 130
			4-Bromofluorobenzene	2010/03/17		92	%	70 - 130
			D10-Ethylbenzene	2010/03/17		84	%	70 - 130
			D4-1,2-Dichloroethane	2010/03/17		99	%	70 - 130
			Benzene	2010/03/17	<0.2		ug/L	
			Toluene	2010/03/17	<0.2		ug/L	
			Ethylbenzene	2010/03/17	<0.2		ug/L	
			o-Xylene	2010/03/17	<0.2		ug/L	
			p+m-Xylene	2010/03/17	<0.4		ug/L	
			Total Xylenes	2010/03/17	<0.4		ug/L	
			F1 (C6-C10)	2010/03/17	<100		ug/L	
			F1 (C6-C10) - BTEX	2010/03/17	<100		ug/L	
2103070	RGA	Method Blank	o-Terphenyl	2010/03/18		97	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/18	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2010/03/18	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2010/03/18	<100		ug/L	
2105933	HRE	Method Blank	Dissolved Lead (Pb)	2010/03/22	<0.5		ug/L	
2103056	GRU	LCS	1,4-Difluorobenzene	2010/03/18		108	%	70 - 130
			4-Bromofluorobenzene	2010/03/18		95	%	70 - 130
			D10-Ethylbenzene	2010/03/18		96	%	70 - 130
			D4-1,2-Dichloroethane	2010/03/18		102	%	70 - 130
			Benzene	2010/03/18		97	%	70 - 130
			Toluene	2010/03/18		98	%	70 - 130
			Ethylbenzene	2010/03/18		107	%	70 - 130
			o-Xylene	2010/03/18		109	%	70 - 130
			p+m-Xylene	2010/03/18		101	%	70 - 130
			F1 (C6-C10)	2010/03/18		108	%	70 - 130
2103070	RGA	LCS	o-Terphenyl	2010/03/18		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/03/18		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/03/18		98	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/03/18		98	%	60 - 130
2105933	HRE	LCS	Dissolved Lead (Pb)	2010/03/22		99	%	90 - 110

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B031836

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 1-800-563-6266
Emergency: (416) 892-8957

IOL/MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 34828

COMPANY NAME: Gunnor Associates (OA)

PH #: 613.742.1781

FAX #: 613.742-6064

COMPANY ADDRESS: 5420 Canotek Rd. Ottawa, ON K1J 1E9

CLIENT PROJECT ID: (#) 10-8518 T02

SAMPLER NAME (PRINT): Chris Rahmer

PROJECT MANAGER: Nancy Haywood.

	FIELD SAMPLE ID	MAXXAM LAB #	MATRIX (SPECIFY)	# CONTAINERS	DATE (YY/MM/DD)	TIME	BTEX	F1	F2 - F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOLATILES	PCB'S	PAH'S	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CR VI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BTEX / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	TSPK-F1BW-10-311	FI8369	W	3	10/03/01	1pm	X																	
2	TBLK-F1BW-10-310	FI8370	W	3	10/03/16	9AM	X	X																
3	TBLK-F24W-10-296	FI8370	W	1	10/03/16	9AM			X															
4	TBLK-M-10-287	FI8370	W	1	10/03/16	9AM								X										
5	FIELD BLANK	FI8371	W	8	10/03/16	9:15a	X	X	X					X										
6																								
7																								
8																								
9																								
10																								

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa

MAXXAM TASK ORDER #: 11064640

IOL CONTACT: Lorne Wedge

REGULATORY CRITERIA / DETECTION LIMITS: O. Reg 153/04 Table 3

SPECIAL INSTRUCTIONS: -EDT -Handle As per TDG

MAXXAM JOB #: B031836

SAMPLES ENTERED BY: PUC/7L

COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL	COOLER ID	CUSTODY SEAL
1	YES				
TEMP 0/4/2°C	AVG	TEMP	AVG	TEMP	AVG

TURNAROUND TIMES

SOIL/WATER		AIR - SUMMA CANISTERS	
Standard (5 days)	☒	Standard (15 days)	☐
Rush (3 days)	☐	Rush (9 days)	☐
(2 days)	☐	(6 days)	☐
(1 day)	☐	(3 days)	☐
(same day)	☐		

RELINQUISHED BY:	DATE: (YY/MM/DD)	TIME:	RECEIVED BY:	DATE: (YY/MM/DD)	TIME:
Joe Murray [signature]	2010/03/16	16:00	[signature] ASAD BHALOU	2010/03/17	11:10

IOL COC-ONTARIO-11/08 White: Maxxam Yellow: Mail Pink: Client

DATA QUALITY REVIEW CHECKLIST - IMPERIAL OIL PROJECTS

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: *16-Mar-10*

Location: *1454 Woodroffe Avenue, Ottawa* Laboratory : *Maxxam Mississauga*

Consultant Project Number: *10-8518T02* Sample Submission Number: *B031836*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC have met acceptance critera.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC have met acceptance criteria*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CoA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CoA (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted (if required) within 48 hours (Yes/No)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes/No)?: *No*

Date Issued: *na* Date of Response: *na*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *N. Haywood* Data Reviewed by (Signature):

Review Date: *5-Apr-10*

Revision Date (if applicable): *na* Revised by (Signature): na

APPENDIX D

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL

The soil field quality assurance and quality control (QA/QC) program consisted of one field duplicate sample for the analysis of BTEX, PHC fractions F1 to F4, and lead.

The groundwater field QA/QC program consisted of one field duplicate, one field blank sample, one trip blank sample for the analysis of BTEX, PHC fractions F1 to F4, and lead and one spiked blank sample for the analysis of BTEX.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits. The RPD is the absolute value of the difference between the sample and its duplicate, divided by the average concentration of the sample and its duplicate (represented as a percentage). The designated RPD alert limits are shown on the following applicable tables. Consistent with laboratory practices and to permit reliable calculations, an RPD is calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit.

Two samples and their corresponding duplicate samples were above the RPD alert limits due to soil heterogeneity. They were as follows:

- p+m-Xylene in BH-11-5; and,
- Total Xylenes in BH-11-5.

The laboratory QA/QC program, where applicable, consisted of the analysis of (a) instrument and extraction surrogate recoveries for soil and/or groundwater samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and laboratory control samples for the group(s) of samples that were analysed. The results are presented in the certificates of analysis.

In summary, no laboratory QA/QC issues were identified with the following exceptions**:**

CofA Number	DQW Number	Matrix	Quality Control	Parameter of Concern	Rationale
B025836	810	Soil	Lab RPD	p+m-Xylene	The RPD was above the limits; however, the results were significantly below the standard. Therefore it does not materially affect the findings of the assessment.
B025836	810	Soil	Lab RPD	Total Xylenes	The RPD was above the limits; however, the results were significantly below the standard. Therefore it does not materially affect the findings of the assessment.

None of the above field and/or laboratory QA/QC issues identified would affect the overall objectives of the assessment.

TABLE QA-I

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL SAMPLES
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/g)

PARAMETER	SAMPLE LOCATION				RPD	STANDARDS
	BH-10-4	RDL	QA11 Duplicate - BH-10-4	RDL		RPD LIMITS (%)[a]
Date Sampled	2010/03/02		2010/03/02			
Benzene	<0.02	0.02	<0.02	0.02	Not Calculated	100
Toluene	<0.02	0.02	<0.02	0.02	Not Calculated	100
Ethylbenzene	<0.02	0.02	<0.02	0.02	Not Calculated	100
o-Xylene	<0.02	0.02	<0.02	0.02	Not Calculated	100
p+m-Xylene	<0.04	0.04	<0.04	0.04	Not Calculated	100
Total Xylenes	<0.04	0.04	<0.04	0.04	Not Calculated	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	10	<10	10	Not Calculated	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	10	<10	10	Not Calculated	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	10	<10	10	Not Calculated	100
Petroleum Hydrocarbons F4 (>C34)	<10	10	<10	10	Not Calculated	100
Lead	<5	5	7	5	Not Calculated	100

a - Acceptance Criteria for Field Duplicate RPD
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are equal to or less than 5X RDL)
BOLD - Exceeds RPD limit

Table QA-II

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER SAMPLES
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/L)

PARAMETER	SAMPLE LOCATION				RPD	STANDARDS
	BH12	RDL	QA1 Duplicate - BH12	RDL		RPD LIMITS (%)[a]
Date Sampled	2010/03/16		2010/03/16			
Benzene	1500	1	1400	1	7%	80
Toluene	230	1	220	1	4%	80
Ethylbenzene	670	1	630	1	6%	80
o-Xylene	94	1	87	1	8%	80
p+m-Xylene	200	2	180	2	11%	80
Total Xylenes	290	2	270	2	7%	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	2700	500	2800	500	4%	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	1000	100	1100	100	10%	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	100	<100	100	Not Calculated	80
Petroleum Hydrocarbons F4 (>C34)	<100	100	<100	100	Not Calculated	80
Lead	<0.5	0.5	<0.5	0.5	Not Calculated	50

a - Acceptance Criteria for Field Duplicate RPD
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are equal to or less than 5X RDL)
BOLD - Exceeds RPD limit

O'CONNOR ASSOCIATES

TABLE QA-III

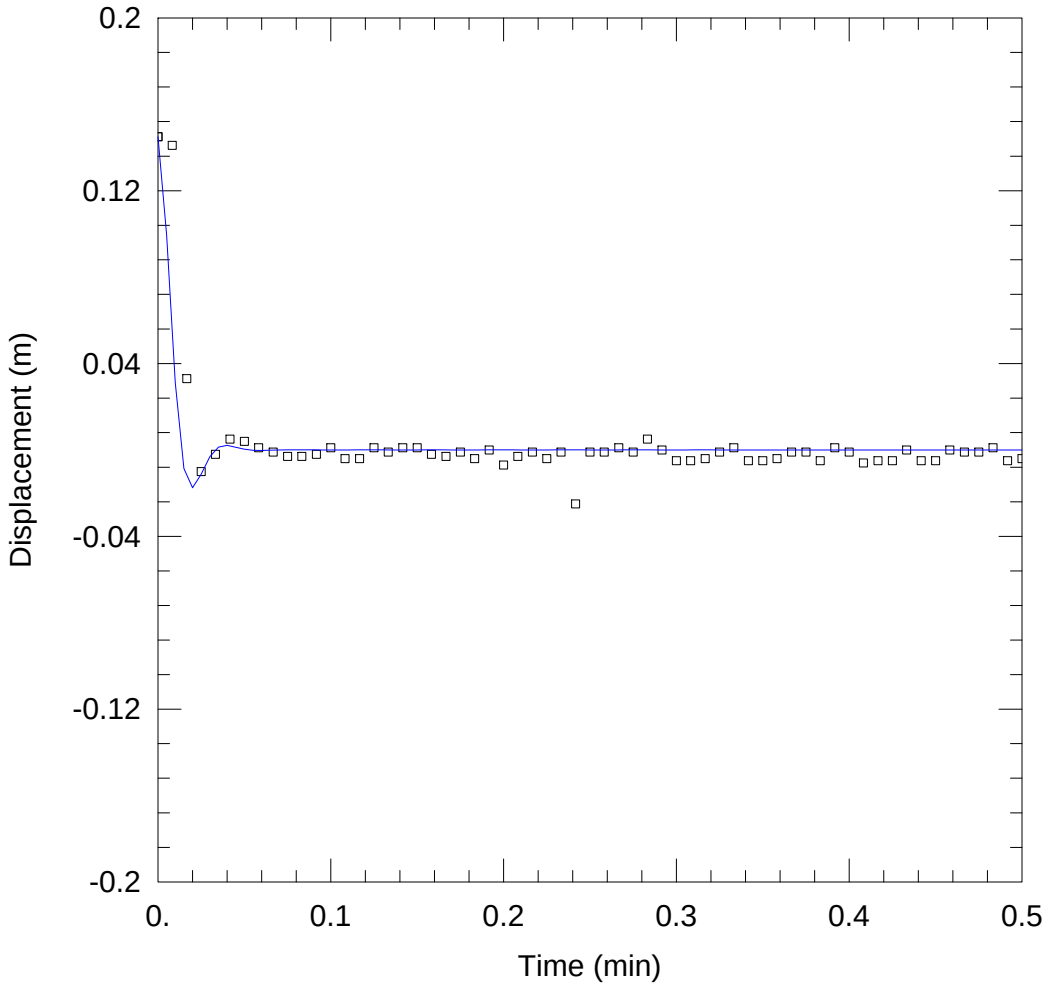
WATER QUALITY ASSURANCE AND QUALITY CONTROL DATA
PETROLEUM-RELATED PARAMETERS AND LEAD
(µg/L)

PARAMETER	RDL	SAMPLE LOCATION		
		FIELD BLANK	TRIP BLANK	TRIP SPIKE % Recovery
Date Sampled		2010/03/16	2010/03/16	2010/03/01
Benzene	0.2	<0.2	<0.2	89
Toluene	0.2	<0.2	<0.2	91
Ethylbenzene	0.2	<0.2	<0.2	88
o-Xylene	0.2	<0.2	<0.2	90
p+m-Xylene	0.4	<0.4	<0.4	86
Total Xylenes	0.4	<0.4	<0.4	-
Petroleum Hydrocarbons F1 (C6 - C10)[a]	100	<100	<100	-
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	<100	-
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	100	<100	<100	-
Petroleum Hydrocarbons F4 (>C34)	100	<100	<100	-
Lead	0.5	<0.5	<0.5	-

a - BTEX have been subtracted from the fraction.
b - Naphthalene has not been subtracted from the fraction.
c - PAHs have not been subtracted from the fraction.
RDL - Reportable detection limit
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are as follows: 5x RDL for BTEX, 2x RDL for petroleum hydrocarbons in the F1 to F4 ranges, and 5x RDL for lead. Alert limits for trip spike are outside of 70% to 130% recovery.

APPENDIX E

HYDRAULIC CONDUCTIVITY



SLUG TEST BH9 T1

Data Set: R:\...\Slug Test BH9 T1.aqt
Date: 06/11/10 Time: 10:48:25

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T02
Location: 1545 Woodroffe Ave, Ottawa
Test Well: BH9
Test Date: 10/03/18

AQUIFER DATA

Saturated Thickness: 5. m Anisotropy Ratio (Kz/Kr): 0.1

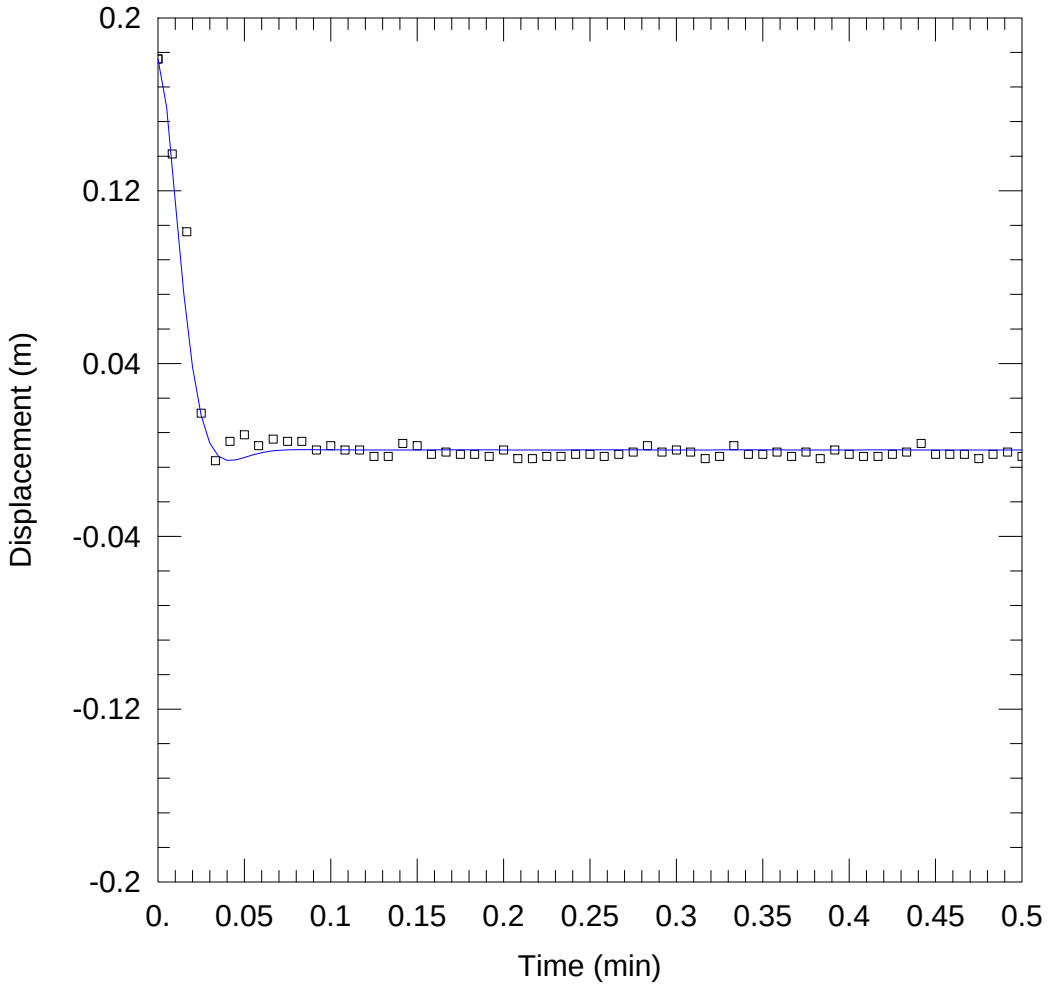
WELL DATA (BH9)

Initial Displacement: 0.145 m
Total Well Penetration Depth: 2.43 m
Casing Radius: 0.0254 m
Static Water Column Height: 2.13 m
Screen Length: 1.7 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar

K = 0.001545 m/sec
Le = 0.9389 m



SLUG TEST BH9 T2

Data Set: R:\...\Slug Test BH9 T2.aqt
Date: 06/11/10 Time: 14:41:57

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T02
Location: 1545 Woodroffe Ave, Ottawa
Test Well: BH9
Test Date: 10/03/18

AQUIFER DATA

Saturated Thickness: 5. m Anisotropy Ratio (Kz/Kr): 0.1

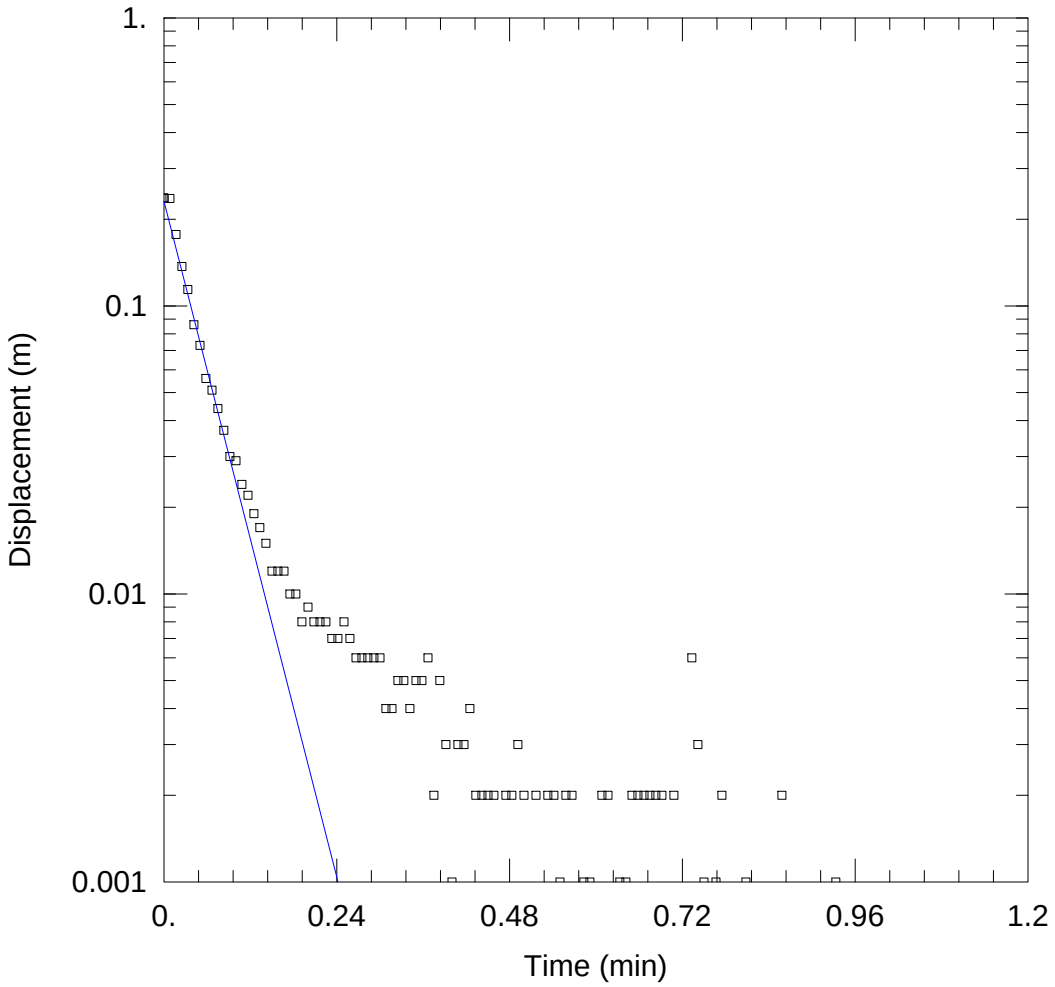
WELL DATA (BH9)

Initial Displacement: 0.181 m
Total Well Penetration Depth: 2.43 m
Casing Radius: 0.0254 m
Static Water Column Height: 2.13 m
Screen Length: 1.7 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar

K = 0.0006789 m/sec
Le = 2.658 m



SLUG TEST BH11 T1

Data Set: R:\NaQ\Projects\IOL\8518T02\Analysis\BH11\Slug Test BH11 T1 BR.aqt
Date: 06/11/10 Time: 10:53:11

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T02
Location: 1545 Woodroffe Ave, Ottawa
Test Well: BH11
Test Date: 10/03/16

AQUIFER DATA

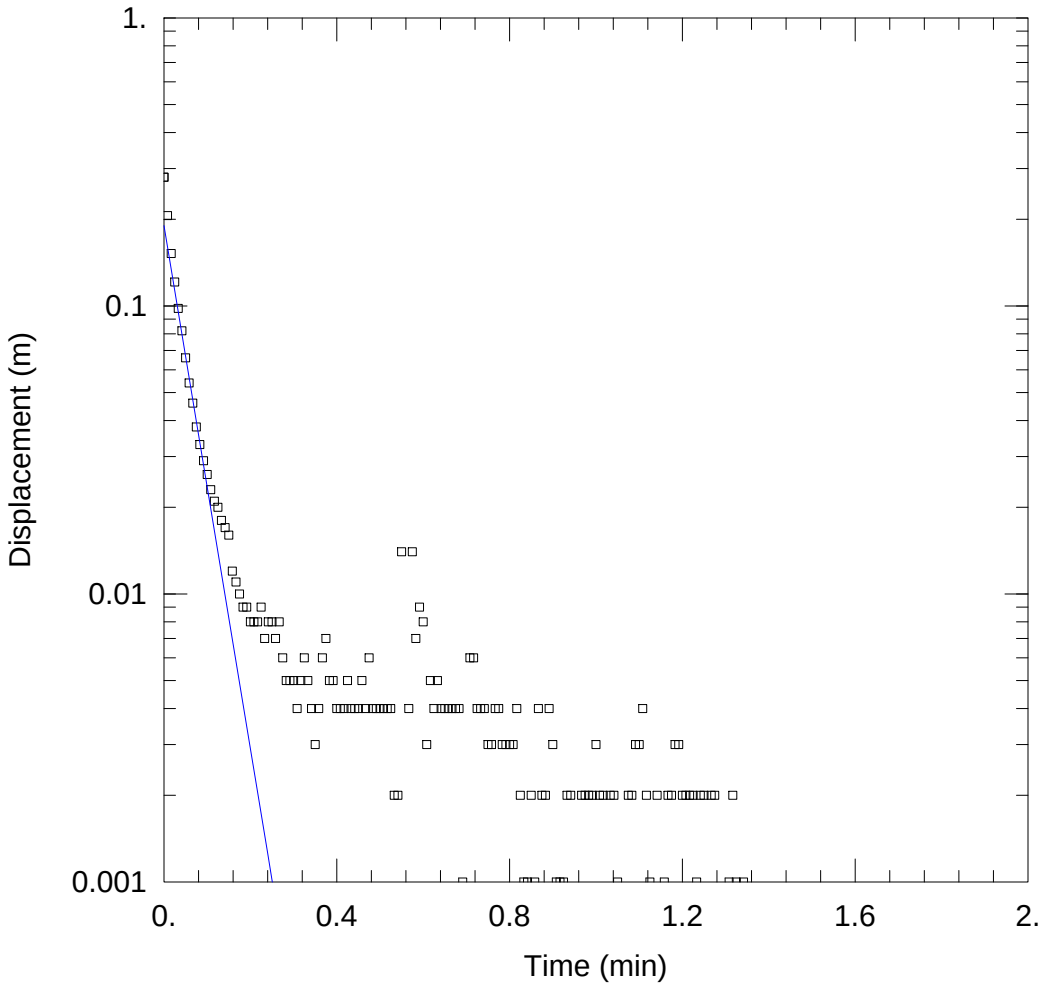
Saturated Thickness: 5. m
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH11)

Initial Displacement: 0.237 m
Total Well Penetration Depth: 1.438 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.438 m
Screen Length: 1.438 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0002084 m/sec
y0 = 0.2307 m



SLUG TEST BH11 T2

Data Set: R:\NaQ\Projects\IOL\8518T02\Analysis\BH11\Slug Test BH11 T2 BR.aqt
Date: 06/11/10 Time: 10:54:22

PROJECT INFORMATION

Company: OAEI
Client: IOL
Project: 10-8518T02
Location: 1545 Woodroffe Ave, Ottawa
Test Well: BH11
Test Date: 10/03/16

AQUIFER DATA

Saturated Thickness: 5. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH11)

Initial Displacement: 0.28 m
Total Well Penetration Depth: 1.438 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.438 m
Screen Length: 1.438 m
Well Radius: 0.1016 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0001936 m/sec
y0 = 0.1901 m

SUPPLEMENTARY PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE
OTTAWA, ONTARIO
Location No.: 88001803

Prepared for:
Imperial Oil Limited
90 Wynford Drive
Toronto, Ontario M3C 1K5

Prepared by:

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.

3715 Laird Road, Suite 100
Mississauga, Ontario L5L 0A3
Phone: (905) 820-1210

Ref. No.: 10-8518T02

These documents and the information contained therein are confidential - property of Imperial Oil Limited and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial Freedom of Information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch.II"1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch.I"1", as such legislation may be amended or replaced from time to time.

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

Distribution:

3 copies – Imperial Oil Limited, Remediation and Reclamation Services, Surplus Property Management (w/CD)

January 17, 2012

SUMMARY

SITE	1545 Woodroffe Avenue, Ottawa, Ontario
Type of Facility	Esso Retail Fuel Outlet
Municipal Zoning	Main Parcel: GM15H(9.5) - General Mixed-Use zone, subzone 15, height restriction of 8 m
Adjacent Land Use	Residential
Aquifer Usage in 250 m radius	None
Reference Standards	MOE (2011) Table 3 (non-potable) site condition standards (medium and fine textured soils, industrial/commercial/community property use)
Type of Organic Vapour Meter Used	Gastechtor 1238ME
Date(s) of Soil Sampling	October 6, 2011
Date(s) of Groundwater Sampling	October 31, 2011
Number of Test Pits Advanced	0
Number of Boreholes Drilled	4 (one to replace an existing monitoring well)
Number of Wells Installed in Boreholes	4

SUMMARY OF BOREHOLES DRILLED:

Description	BH10	BH-13	BH-14	BH-15
Well Installed	Yes	Yes	Yes	Yes
Depth (mbgs)	6.1	6.1	6.1	6.1
Dominant Soil Type	Granular fill, silt and sand	Granular fill, silt and sand	Silt and sand	Silt and sand
Depth to Groundwater (mbgs)	4.87	3.83	5.23	5.29
Screened Interval (mbgs)	3.7 to 6.1	3.7 to 6.1	3.7 to 6.1	3.0-6.1
Free Product Thickness (mm)	ND	ND	ND	ND
Exceeded Soil Standards	NA	Yes	No	No
Exceeded Groundwater Standards	No	Yes	No	No
Vertical Soil Impact Delineation Achieved	NA	Yes	NA	NA

Notes:
ND – not detected
mbgs – metres below ground surface
mm – millimetres
MOE – Ontario Ministry of the Environment
NS – not sampled
NA – not applicable or not available

TABLE OF CONTENTS

Page

SUMMARY i

LIST OF TABLES: iv

LIST OF DRAWINGS: iv

LIST OF APPENDICES: iv

1.0 INTRODUCTION 1
- 1.1 Background 1
- 1.2 Scope of Work 1

2.0 FIELD ACTIVITIES 2
- 2.1 Borehole Day-Lighting and Drilling 2
- 2.2 Monitoring Well Installation 3
- 2.3 Soil Sampling 3
- 2.4 Groundwater Monitoring and Sampling 4
- 2.5 Surveying 5
- 2.6 Quality Assurance and Quality Control 5
- 2.7 Laboratory Analyses 5

3.0 FINDINGS 6
- 3.1 Field Observations 6
  - *3.1.1 Stratigraphy 6*
  - *3.1.2 Vapour Concentrations 6*
  - *3.1.3 Groundwater 6*
  - *3.1.4 Free Product 6*
- 3.2 Selected Site Condition Standards 7
- 3.3 Soil Analytical Results 7
- 3.4 Groundwater Analytical Results 8
- 3.5 Quality Assurance and Quality Control Results 9

4.0 SUMMARY AND CONCLUSIONS 9

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE 10

LIST OF TABLES:

Table 1	Groundwater Monitoring Results
Table 2	Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead
Table 3	Soil Analytical Results – Waste Classification – TCLP
Table 4	Soil Analytical Results – Waste Classification – Petroleum Hydrocarbon Parameters and Lead
Table 5	Soil Analytical Results – Waste Classification – Metals
Table 6	Groundwater Analytical Results – Petroleum Hydrocarbon Parameters, and Lead

LIST OF DRAWINGS:

Drawing No. 1	Site Location Map
Drawing No. 2	Site Plan
Drawing No. 3	Monitoring Well Location Plan
Drawing No. 4	Elevation of the Groundwater Potentiometric Surface – Sand– 2011/10/31
Drawing No. 5	Elevation of the Groundwater Potentiometric Surface – Clay– 2011/10/31
Drawing No. 6	Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead
Drawing No. 7	Groundwater Analytical Results – Petroleum Hydrocarbon Parameters and Lead

LIST OF APPENDICES:

Appendix A	Borehole Logs
Appendix B	MOE Well Registration Record
Appendix C	Laboratory Certificates of Analysis – Soil and Groundwater
Appendix D	Quality Assurance and Quality Control

1.0 INTRODUCTION

O'Connor Associates Environmental Inc. was retained by Imperial Oil Limited to conduct a Supplementary Phase Two Environmental Site Assessment (ESA) at an operating Esso retail fuel outlet located at 1545 Woodroffe Avenue, in Ottawa, Ontario (the Site).

The purpose of the assessment was to further assess for potential contaminants of concern in the soil and groundwater on-site based on previous assessments. The fieldwork was conducted from October 6, 2011 to October 31, 2011.

1.1 BACKGROUND

The Site location is shown on Drawing No. 1 and a Site plan showing the current and former Site configurations are presented on Drawing No. 2. The borehole and monitoring well locations are presented on Drawing No. 3.

Imperial Oil operated the Site as a service station since the early 1960's. Prior to the 1960's, the land was used for agricultural purposes. The location of the repair garage in the 1975 configuration was moved to the west by at least 1983. Between 1983 and 1995, the Site was reconfigured again; a repair garage was constructed and located in the northeast portion of the property. In 1993, the repair garage was converted to a Tim Hortons restaurant.

In 2008, a subsurface investigation was completed prior to undertaking a planned underground storage tank (UST) upgrade. In 2009 at the time of the site upgrade, the UST tank nest excavation was expanded to remove petroleum hydrocarbon (PHC) contaminated soil. In 2010, a supplementary investigation was completed to assess potential PHC related impacts in the soil and groundwater.

The current Site is an active petroleum retail outlet which included a convenience store; a carwash; a Tim Hortons restaurant; and three pump islands on a concrete apron underneath a canopy. In addition, three 46 000 L gasoline USTs and one 22 700 L diesel UST are located at the Site.

According to the City of Ottawa, the main parcel of the Site is zoned as general mixed use. The triangular parcel located on the north side of the Site which is not part of this assessment is a residential third density zone.

1.2 SCOPE OF WORK

The scope of work was to perform the following activities:

- Advance three boreholes (BH-13 to BH-15) north and west of the convenience store and install a monitoring well in each.

- Re-drill borehole BH10 and install a monitoring well in the sand because the previous well was historically dry.

- Collect soil samples from each borehole, except BH10, for laboratory analysis of: benzene, toluene, ethylbenzene, xylenes (BTEX); PHC Fractions F1 to F4; hexane; and lead.

- Collect a soil sample for ignitability testing; toxicity characteristic leaching procedure (TCLP) analysis, with the leachate being analyzed for volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs); and bulk analysis for BTEX, PHC fractions F1 to F4 and metals to facilitate disposal of excess soil.

- Monitor all of the new and existing wells for subsurface vapour concentrations, water levels and the presence of light non-aqueous phase liquid hydrocarbons (free product).

- Collect groundwater samples from all of the new and existing monitoring wells for laboratory analysis of: BTEX; PHC fractions F1 to F4; and lead.

- Prepare a report that describes the field activities and the results of the ESA.

2.0 FIELD ACTIVITIES

Prior to proceeding with the subsurface investigation, various utility representatives and a private utility locating contractor identified underground utility locations.

All field procedures were conducted in accordance with the Ontario Ministry of the Environment (MOE) *Guidance for Completing Phase Two Environmental Site Assessments* under Ontario Regulation 153/04 (as amended), the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended), and standard industry practice.

2.1 BOREHOLE DAY-LIGHTING AND DRILLING

Scott Environmental Group Ltd. was retained by O'Connor Associates to day-light the boreholes. Three boreholes were day-lighted on October 6, 2011 to depths ranging from 1.2 m below ground surface (mbgs) to 1.8 mbgs using a vacuum excavator and water lance.

George Downing Estate Drilling ltd. was retained by O'Connor Associates to advanced boreholes BH10 and BH-13 to BH-15 using a CME 55 truck-mounted flight auger rig on October 6, 2011. The borehole locations are shown on Drawing No. 3. The boreholes were advanced to a maximum depth of 6.1 mbgs.

2.2 MONITORING WELL INSTALLATION

A monitoring well, consisting of a 51 mm diameter polyvinyl chloride (PVC) screen and an un-slotted riser, was installed in each borehole. The annular space between the PVC well and the borehole wall was backfilled to approximately 0.3 m above the top of the screen with silica sand, and then with hydrated bentonite pellets to approximately 0.1 mbgs. The monitoring well was then finished with a flush-mount casing set in concrete grout to protect the well from damage.

Following installation of the monitoring wells, the wells were developed by purging the water until it was observed to be reasonably free of turbidity or until the wells became dry.

Monitoring well installation details are presented on the borehole logs in Appendix A and in Table 1. The MOE well record is presented in Appendix B.

2.3 SOIL SAMPLING

Soil sampling was conducted at regular depth intervals in the boreholes using a stainless steel spoon sampling device and a split-spoon sampler. The samples were collected from each device using a clean stainless steel trowel and nitrile gloves and placed in laboratory supplied jars. The sampling devices were washed prior to collection of each soil sample. Specifically, any excess soil was brushed off prior to scrubbing the sampling devices with soapy water, rinsing with distilled water and allowing it to air dry. Each soil sample was immediately split and one portion of the sample was sealed in a clean plastic bag for screening, which included determining textural description, visual evidence of impact (e.g., staining or free product), and measurement of the sample combustible headspace vapour concentration (soil vapour concentration). The remainder of the sample was promptly placed in containers supplied by the laboratory and stored in coolers with ice for possible analysis.

The soil samples submitted for analysis of BTEX, PHC fraction F1 and hexane were each collected in two 40 mL vials pre-charged with methanol. Approximately 5 g of soil was collected from the stainless steel spoon sampling device or split spoon sampler using a clean disposal syringe and nitrile gloves and placed in each methanol filled sampling vial. Samples for the remaining parameters were collected in either 60 mL or 120 mL glass jars with Teflon lined lids.

The soil vapour concentrations were measured using a combustible gas detector (Gastech Model 1238ME having a minimum detection level of 5 parts per million by volume (ppmv). The gas detector was operated in the methane elimination mode.

The calibration of the gas detector is checked daily in the field. The calibration check procedure involved checking the instrument response against both a low [nominal 400 ppmv] and high [nominal 43% lower explosive limit (LEL)] concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument readings are within ±10% of the gas

standard value, then the instrument is deemed to be calibrated. However, if either of the readings is greater than ±10% of the gas standard value, then the instrument calibration is adjusted in the field, until the instrument reads within ±10% for both gas standards.

Soil sampling details are presented on the borehole logs in Appendix A.

Typically two samples from each borehole were selected for laboratory analyses, based on sample location relative to the apparent water table, visual observations and/or field screening results. In general, one worst case soil sample, based on field screening results, and one sample from the first apparent non-impacted zone, was submitted for laboratory analysis. The samples were stored in coolers with ice.

2.4 GROUNDWATER MONITORING AND SAMPLING

On October 31, 2011, all of the new and existing accessible wells were monitored for subsurface vapour concentrations, water levels, and the presence or absence of free product. The wells were generally monitored in order of least impacted to most impacted based on historical results and field screening results.

Immediately after removing the well cap, the maximum subsurface vapour concentrations in the wells were measured using a Gastechtor 1238ME combustible gas detector that was operated in methane elimination mode. This was done by inserting the collection tube of the gastechtor into the riser pipe and recording the peak instrument reading.

The depth to the water table and presence or absence of free product in the wells were determined with a Heron H.OIL electronic interface probe that was cleaned with a solution of phosphate free detergent and water and rinsed with distilled water between monitoring wells.

If measurable free product is observed in any well, O'Connor Associates protocol is not to collect a groundwater sample from that well. However, groundwater samples are collected from wells if a petroleum hydrocarbon sheen is observed.

Groundwater samples were collected from all accessible monitoring wells on October 31, 2011. The wells were sampled using a low-flow purging methodology. Low-flow purging was completed using a variable-flow peristaltic pump to remove groundwater from the mid-point of the monitoring well screened zone. The pump was connected to a flow-through cell equipped with a multi-meter that measured pH, temperature, conductivity, dissolved oxygen (DO), oxidation reduction potential (REDOX), and turbidity. During low-flow purging, the water level in the well was continually monitored, and the purging rate was adjusted such that the overall draw-down did not exceed 10 cm. The sample was collected when the pH, temperature, conductivity, DO, REDOX, and turbidity measurements stabilized to within 10% of one another over three consecutive readings.

All groundwater samples were collected using polyethylene tubing that was individually dedicated to each monitoring well.

Samples for analysis of BTEX and PHC fraction F1 were collected in 40 mL clear glass vials (with zero headspace), pre-charged with hydrochloric acid (HCl) preservative. Samples for analysis of PHC fractions F2 to F4 were collected in 500 mL amber glass bottles pre-charged with HCl preservative. Samples for analysis of lead were field filtered using 0.45 µm in-line filters and collected in 250 mL HDPE plastic bottles pre-charged with nitric acid preservative. All sample bottles were supplied by the laboratory. The groundwater samples were placed in coolers with ice immediately after they were collected.

2.5 SURVEYING

On October 7, 2011 all of the newly installed monitoring wells were surveyed vertically relative to an arbitrary benchmark. The assigned elevation of the benchmark was 88.79 m. The benchmark location is shown on Drawing No. 2 and described in Table 1.

2.6 QUALITY ASSURANCE AND QUALITY CONTROL

A quality assurance and quality control (QA/QC) program was implemented to reduce and quantify potential issues introduced during sample collection, handling, shipping and analysis. The program included, but was not limited to using dedicated sampling equipment, using sample specific identification and labelling procedures, and using chain of custody records. Field QA/QC samples consisted of one field duplicate soil sample for analysis of BTEX, PHC fractions F1 to F4, hexane, and lead. In addition, one field blank methanol sample for BTEX, PHC Fraction F1 and hexane, were submitted to the laboratory.

The groundwater QA/QC samples submitted to the laboratory included one field duplicate sample, one field blank and one trip blank for analysis of BTEX, PHC Fractions F1 to F4, and lead.

2.7 LABORATORY ANALYSES

The soil and groundwater samples collected from the boreholes were submitted for laboratory analyses of one or more of the following parameters: BTEX; PHC fractions F1 to F4; hexane; and lead. A total of 6 soil samples and 10 groundwater samples, excluding QA/QC samples, were submitted for analysis.

To facilitate soil disposal, one soil sample was submitted for ignitability testing and TCLP analysis, with the leachate being analyzed for VOCs, and PCBs; and bulk analysis for BTEX; PHC fractions F1 to F4 and metals, as specified by Veolia Environmental Services in Ottawa, Ontario.

The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam is accredited by the Standards Council of Canada. Analytical methods used by the

laboratory are referenced in the certificates of analysis presented in Appendix C. Analytical procedures were conducted in accordance with the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended).

3.0 FINDINGS

3.1 FIELD OBSERVATIONS

3.1.1 STRATIGRAPHY

The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of gravel fill to depths of up to 1 mbgs; sandy silt, silty sand or sand to the maximum depth of assessment of 6.1 mbgs. Detailed stratigraphic descriptions are presented on the borehole logs in Appendix A.

3.1.2 VAPOUR CONCENTRATIONS

Soil vapour concentrations measured in the samples recovered from the boreholes are presented on the logs in Appendix A. The soil vapour concentrations ranged from not detected (<5 ppmv) to 15% LEL ppmv.

Subsurface vapour concentrations measured in the monitoring wells on October 31, 2011 are presented in Table 1. As indicated, the subsurface vapour concentrations ranged from 60 ppmv to 17% LEL.

3.1.3 GROUNDWATER

On October 31, 2011, the depth to groundwater ranged from 3.83 mbgs to 5.43 mbgs. The groundwater depths and the calculated potentiometric elevations are presented in Table 1.

The groundwater potentiometric elevations are contoured on Drawing No. 4. As indicated, the inferred principal direction of groundwater flow in the sand layer was radial from BH-13. Since groundwater elevations were measured at only two monitoring well locations in the clay and/or slit layer, the inferred direction of groundwater flow in this stratigraphic unit could not be determined. The potentiometric elevations of the clay and/or silt layer are presented on Drawing No.5.

3.1.4 FREE PRODUCT

As indicated in Table 1, measurable free product was detected only in monitoring well BH12 on October 31, 2011. The free product was purged from the well and disposed of off-site.

3.2 SELECTED SITE CONDITION STANDARDS

For this Site, the approach to use the amended (2011) Ontario Regulation 153/04 generic site condition standards was selected. The rationale for selection of the applicable MOE 2011 standards is described below and based on information that is detailed in this or other sections of the report.

3.2.1 SITE SENSITIVITY

The Site would not be considered environmentally sensitive, based on the following:

- No part of the Site is on or within 30 m of an area of natural significance;
- pH values for surface soil samples were assumed not less than 5 or greater than 9; and
- pH values for subsurface soil samples were not less than 5 or greater than 11.

3.2.2 GROUNDWATER CONDITION

The groundwater condition is non-potable, based on the following:

- The Site and all properties within 250 m of the Site boundaries are supplied by a municipal drinking-water system.

3.2.3 SHALLOW SOIL PROPERTY

The Site would not be considered a shallow soil property, based on the following:

- The available borehole logs and geologic records indicate that less than one-third of the area of the Site consists of soil equal to or less than 2 m in depth beneath the soil surface, excluding any non-soil surface treatment.

3.2.4 NEARBY WATER BODY

A water body, in whole or in part, is not on the Site or within 30 m of the Site boundaries.

3.2.5 SOIL TEXTURE

The applicable soil texture for the Site is:

- Medium and fine textured soils, as determined by borehole logs, geological maps and historical grain size analyses, which collectively indicated that more than 50 percent of particles were smaller than 75 µm in diameter.

3.2.6 Property Use

The applicable property use is as follows:

- Industrial/commercial/community property use, as the current zoning of the Site is General Mixed-Use.

3.2.7 Full Depth or Stratified Site Condition Standards

The option to use the full depth, rather than the stratified, generic site condition standards was selected.

3.2.8 Selected Site Condition Standards

Based on the above discussion, the following site condition standards were selected for application at the Site:

- Full depth generic site condition standards in a non-potable groundwater condition (MOE 2011 Table 3) for industrial/commercial/community property use and medium and fine textured soils.

3.3 Soil Analytical Results

The soil analytical results for BTEX, PHC fractions F1 to F4, hexane, and lead are presented and compared to the applicable MOE Table 3 standards in Table 2. The BTEX, PHC fractions F1 to F4, hexane and lead results are also shown on Drawing No. 6. As indicated, all of the results satisfied the applicable standards with the exception of PHC Fraction F1 from BH-13.

The soil sample submitted for leachate analysis met the referenced Schedule 4 criteria and would be classified as non-hazardous (solid) waste under Ontario Regulation 347 (as amended), and the sample was not ignitable. The waste classification analytical results are presented in Table 3. The soil sample analytical results submitted for bulk analysis as required by the waste receiver are presented in Tables 4 and 5. The soil was subsequently transported off-site for disposal at Veolia Environmental Services in Ottawa, Ontario.

3.4 Groundwater Analytical Results

The groundwater analytical results for BTEX, PHC fractions F1 to F4, and lead, are presented and compared to the applicable MOE Table 3 standards in Table 6. The BTEX, PHC fractions F1 to F4 and lead results are also shown on Drawing No. 7. As indicated, half of the results exceeded the applicable standards.

3.5 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

The results of the laboratory QA/QC analyses are presented in the laboratory certificates of analysis in Appendix C. The analyses included instrument and extraction surrogate recovery, method blanks, matrix duplicates, matrix spikes, and laboratory control samples. No lab QA/QC issues were identified that call into question the reliability of the lab data reported.

The results of the field QA/QC sample analysis are presented in the tables in Appendix D. The samples included a trip blank, field blank and field duplicate. No field QA/QC issues were identified that call into question the reliability of the lab data reported.

The laboratory and field QA/QC discussions are presented in Appendix D. In summary, no QA/QC issues were identified that would affect the overall conclusions for the Phase II ESA results presented in this report.

4.0 SUMMARY AND CONCLUSIONS

During this supplementary Phase II ESA, three new boreholes were advanced and monitoring wells were installed in each borehole, and one existing borehole was drilled and a new monitoring well was installed. Soil and groundwater samples were submitted for laboratory analysis of one or more of the following parameters: BTEX; PHC fractions F1 to F4; hexane; and lead.

The results of the investigation are summarized as follows:

1. The stratigraphic profile encountered in the boreholes with increasing depth generally consisted of gravel fill to depths of approximately 1 mbgs; and sandy silt, silty sand or sand to the maximum depth of assessment of 6.1 mbgs.

2. The depth to groundwater ranged from 3.83 mbgs to 5.43 mbgs. The inferred principal direction of groundwater flow in the sand was radial to the east from the western property boundary and could not be determined in the clay and/or slit layer.

3. Free product was detected in BH12 during monitoring of the wells.

4. The MOE (2011) Table 3 (non potable) site condition standards for medium and fine textured soils and industrial/commercial/community property use were selected for comparison with the soil and groundwater analytical results.

5. All soil sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, hexane and lead, with the exception of PHC fraction F1 identified in one borehole west of the convenience store.

6. All groundwater sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC Fractions F1 to F4, and lead for about half of the wells and the other half exceeded the applicable standards for one or more of the following: benzene; ethylbenzene; xylene; and PHC Fraction F1 to F3.

7. The soil sample submitted for leachate analysis met the referenced Schedule 4 criteria and would be classified as non-hazardous solid waste under Ontario Regulation 347 (as amended) and the sample was not ignitable.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc. for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and O'Connor Associates make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates. Nothing in this report is intended to constitute or provide a legal opinion.

We trust the foregoing information is satisfactory for your requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

O'CONNOR ASSOCIATES ENVIRONMENTAL INC.

Raymond Baksi, B.E.S.

Gerry Parrott, P.Geo.

RVJB:lck

W:\8000-999\8518#00\8518#02\8518T0211.R02(P2)f.docx

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH1	88.51	88.61	1.8 - 4.3	2008/11/19 2008/12/11 2009/05/12	>100% 45% AW	DRY DRY AW	DRY DRY AW	DRY DRY AW
BH2	88.33	88.51	1.5 - 4.3	2008/11/19 2008/12/11 2009/05/12	325 175 AW	ND ND AW	4.25 3.40 AW	84.26 85.11 AW
BH3	88.50	88.63	4.6 - 6.1	2008/11/19 2008/12/11 2009/05/12	70% >100% AW	ND ND AW	4.98 4.95 AW	83.65 83.69 AW
BH4	88.62	88.72	4.2 - 6.1	2008/11/19 2008/12/11 2009/05/12	170 5% AW	ND ND AW	5.06 5.04 AW	83.65 83.68 AW
BH5	88.79 88.79	88.85 88.92	1.8 - 4.6	2008/11/19 2008/12/11 2009/05/12 2010/03/16 2010/06/03 2010/07/23 2010/11/17 2011/06/27 2011/10/31	20% 20% 95 75 5% 10% 5% 5% 8%	ND ND ND ND ND ND ND ND ND	4.37 4.13 3.17 3.32 3.93 4.11 4.06 3.34 4.32	84.48 84.72 85.68 85.60 84.99 84.81 84.86 85.58 84.60
BH6	88.77 88.82	88.89 88.95	2.0 - 4.7	2008/11/19 2008/12/11 2009/05/12 2010/03/16 2010/06/03 2010/07/23 2010/11/17 2011/06/27 2011/10/31	25% >100% 11% 25% >100% 5% >100% >100% 5%	ND Sheen ND ND ND ND ND ND ND	5.25 5.23 4.99 5.09 5.11 5.21 5.11 4.93 5.28	83.63 83.66 83.90 83.86 83.84 83.74 83.84 84.02 83.67
BH7	88.87 88.85	88.94 88.97	2.0 - 4.7	2008/11/19 2008/12/11 2009/05/12 2010/03/16 2010/06/03 2010/07/23 2010/11/17 2011/06/27 2011/10/31	150 225 160 50 75 100 150 120 180	ND ND ND ND ND ND ND ND ND	3.86 3.67 3.14 3.31 3.55 3.70 3.60 3.34 3.99	85.07 85.26 85.79 85.67 85.42 85.27 85.37 85.64 84.98
BH8	88.88	89.00	4.5 - 6.0	2010/03/16 2010/06/03 2010/07/23 2010/11/17 2011/06/27 2011/10/31	75 75 150 150 140 175	ND ND ND ND ND ND	5.14 5.18 5.28 5.18 5.00 5.35	83.86 83.82 83.72 83.82 84.00 83.66
BH9	88.97	89.10	5.8 - 7.3	2010/03/16 2010/06/03 2010/07/23 2010/11/17 2011/06/27 2011/10/31	25 25 25 50 <5 60	ND ND ND ND ND ND	5.23 5.27 5.37 5.27 5.09 5.43	83.87 * 83.83 * 83.73 * 83.83 * 84.01 * 83.67 *

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH10	88.47	88.56	1.5 - 4.1	2010/03/16	50	DRY	DRY	DRY
				2010/06/03	100	DRY	DRY	DRY
				2010/07/23	100	DRY	DRY	DRY
				2010/11/17	150	DRY	DRY	DRY
				2011/06/27	80	DRY	DRY	DRY
	88.46	88.56	3.7 - 6.1	2011/10/31	13%	ND	4.87	83.69
BH11	88.43	88.57	3.1 - 6.1	2010/03/16	5%	ND	4.70	83.87
				2010/06/03	500	ND	4.72	83.85
				2010/07/23	15%	ND	4.82	83.75
				2010/11/17	15%	ND	4.73	83.84
				2011/06/27	325	ND	4.44	84.13
	88.53	88.57		2011/10/31	16%	ND	4.79	83.78
BH12	88.74	88.82	3.0 - 6.0	2010/03/16	>100%	ND	4.97	83.86
				2010/06/03	225	ND	4.99	83.83
				2010/07/23	>100%	ND	5.09	83.73
				2010/11/17	>100%	ND	5.00	83.82
				2011/06/27	>100%	73 (4)	4.80	84.02
				2011/10/31	240	2 (0)	5.15	83.67
BH-13	88.42	88.49	3.7 - 6.1	2011/10/31	17%	ND	3.83	84.65
BH-14	88.77	88.86	3.7 - 6.1	2011/10/31	12%	ND	5.23	83.63
BH-15	88.84	88.94	3.0 - 6.1	2011/10/31	400	ND	5.29	83.66

1 - Relative to local benchmark (BH5) having an elevation of 88.79 m
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75 g/cm^3
AW - Abandoned well
m - metres
mbgs - metres below ground surface
mm - millimetres
ND - Not detected
( ) - After bailing/purging
* - Water level above top of screen

O'CONNOR ASSOCIATES

TABLE 2

SOIL ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-13-3.1-3.7	DUP-11 FIELD DUPLICATE BH-13-3.1-3.7	BH-13-5.3-5.9	BH-14-3.1-3.7	BH-14-3.8-4.4	BH-15-3.1-3.7	BH-15-5.3-5.9	TABLE 3 STANDARDS[a]
Maxxam Sample ID	LE6232	LE6233	LE6234	LE6235	LE6236	LE6237	LE6238	
Sample Depth (mbgs)	3.1-3.7	3.1-3.7	5.3-5.9	3.1-3.7	3.8-4.4	3.1-3.7	5.3-5.9	
Date Sampled (yyyy/mm/dd)	2011/10/06	2011/10/06	2011/10/06	2011/10/06	2011/10/06	2011/10/06	2011/10/06	
PARAMETERS								
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.4
Toluene	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	78
Ethylbenzene	6.1	6.7	<0.02	<0.02	<0.02	<0.02	<0.02	19
Total Xylenes	7.5	8.2	<0.04	<0.04	<0.04	<0.04	<0.04	30
Petroleum Hydrocarbons F1 (C6 - C10)[b]	280	340	<10	<10	<10	<10	<10	65
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	33	30	<10	<10	<10	<10	<10	250
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	<10	<10	<10	<10	<10	<10	2500
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	<10	<10	<10	<10	<10	<10	6600
Hexane	5.0	6.4	<0.5	<0.5	<0.5	<0.5	<0.5	88
Lead	9	<5	<5	10	9	<5	9	120

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part IV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

mbgs - metres below ground surface

Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis

BOLD - Exceeds applicable standard

* - Result from F4 gravimetric analysis

TABLE 3

SOIL ANALYTICAL RESULTS - WASTE CLASSIFICATION - TCLP

SAMPLE LOCATION	WC-1545	SCHEDULE 4 CRITERIA[a]
Maxxam Sample ID	LE6509	
Date Sampled (yyyy/mm/dd)	2011/10/06	
PARAMETER		
Ignitability	NF/NI	NI
TCLP Leachate:		
Organics		
Benzene	<0.02	0.5
Carbon Tetrachloride	<0.02	0.5
Chlorobenzene	<0.02	8.0
Chloroform	<0.02	10.0
1,2-Dichlorobenzene	<0.05	20.0
1,4-Dichlorobenzene	<0.05	0.5
1,2-Dichloroethane	<0.05	0.5
1,1-Dichloroethylene	<0.02	1.4
Methylene Chloride	<0.2	5.0
Methyl ethyl ketone	<1	200
Tetrachloroethylene	<0.02	3.0
Trichloroethylene	<0.02	5.0
Vinyl Chloride	<0.02	0.2
PCBs	<0.003	0.3

a - Schedule 4 of Ontario Reg. 347 as amended under the Environmental Protection Act, September 2000.
NF/NI - Non flammable and non ignitable
TCLP - Toxicity Characteristic Leaching Procedure
"-" - Not analyzed
Results for all leachate parameters are reported in milligrams per litre (mg/L)
BOLD - Exceeds applicable criteria

TABLE 4

SOIL ANALYTICAL RESULTS - WASTE CLASSIFICATION
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATION	WC-1545
Maxxam Sample ID	LE6509
Date Sampled (yyyy/mm/dd)	2011/10/06
PARAMETER	
Benzene	<0.02
Toluene	<0.02
Ethylbenzene	<0.02
Total Xylenes	<0.04
Petroleum Hydrocarbons F1 (C6 - C10)[a]	<10
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	<10
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	32
Petroleum Hydrocarbons F4 (>C34 - C50)	53
Lead	8

a - BTEX have been subtracted from the fraction.
b - Naphthalene has not been subtracted from the fraction.
c - PAHs have not been subtracted from the fraction.
"-" - Not analyzed
Results for all leachate parameters are reported in micrograms per gram (µg/g) on a dry weight basis

TABLE 5

SOIL ANALYTICAL RESULTS - WASTE CLASSIFICATION
METALS

SAMPLE LOCATION	WC-1545
Maxxam Sample ID	LE6509
Date Sampled (yyyy/mm/dd)	2011/10/06
PARAMETER	
Antimony	<0.2
Arsenic	1
Barium	170
Beryllium	0.4
Boron	<5
Cadmium	<0.1
Chromium	32
Cobalt	8.8
Copper	21
Molybdenum	<0.5
Nickel	19
Selenium	<0.5
Silver	<0.2
Thallium	0.21
Uranium	0.67
Vanadium	40
Zinc	52

"-" - Not analyzed
Results for all leachate parameters are reported in micrograms per gram (µg/g) on a dry weight basis

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH-5	BH-6	BH-7	BH-8	DUP-2 FIELD DUPLICATE BH-8	BH-9	BH-10	BH-11	BH-13	BH-14	TABLE 3 STANDARDS[a]
Maxxam Sample ID	LM3297	LM3296	LM3119	LM3225	LM3226	LM3118	LM3227	LM3245	LM3243	LM3244	
Date Sampled (yyyy/mm/dd)	2011/11/01	2011/10/31	2011/10/31	2011/10/31	2011/10/31	2011/10/31	2011/10/31	2011/10/31	2011/10/31	2011/10/31	
PARAMETERS											
Benzene	48	**440**	<0.20	16	17	<0.20	10	7.9	4.1	3.7	430
Toluene	<2.0	74	<0.20	4.5	4.8	<0.20	0.27	10	52	0.31	18 000
Ethylbenzene	1400	**2500**	<0.20	140	150	<0.20	2.8	27	340	75	2300
Total Xylenes	3100	**5200**	<0.40	8.1	9.2	<0.40	0.67	180	730	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	**5000**	**7800**	<25	490	600	<25	<25	610	**930**	110	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	**2700**	**2300**	<100	**230**	**240**	<100	<100	**240**	**270**	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	500
Lead	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

Results for all parameters are reported in micrograms per litre (µg/L)

BOLD - Exceeds applicable standard

TABLE 6

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH-15	TABLE 3 STANDARDS[a]
Maxxam Sample ID	LM3120	
Date Sampled (yyyy/mm/dd)	2011/10/31	
PARAMETERS		
Benzene	<0.20	430
Toluene	<0.20	18 000
Ethylbenzene	<0.20	2300
Total Xylenes	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<25	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	500
Lead	<0.5	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

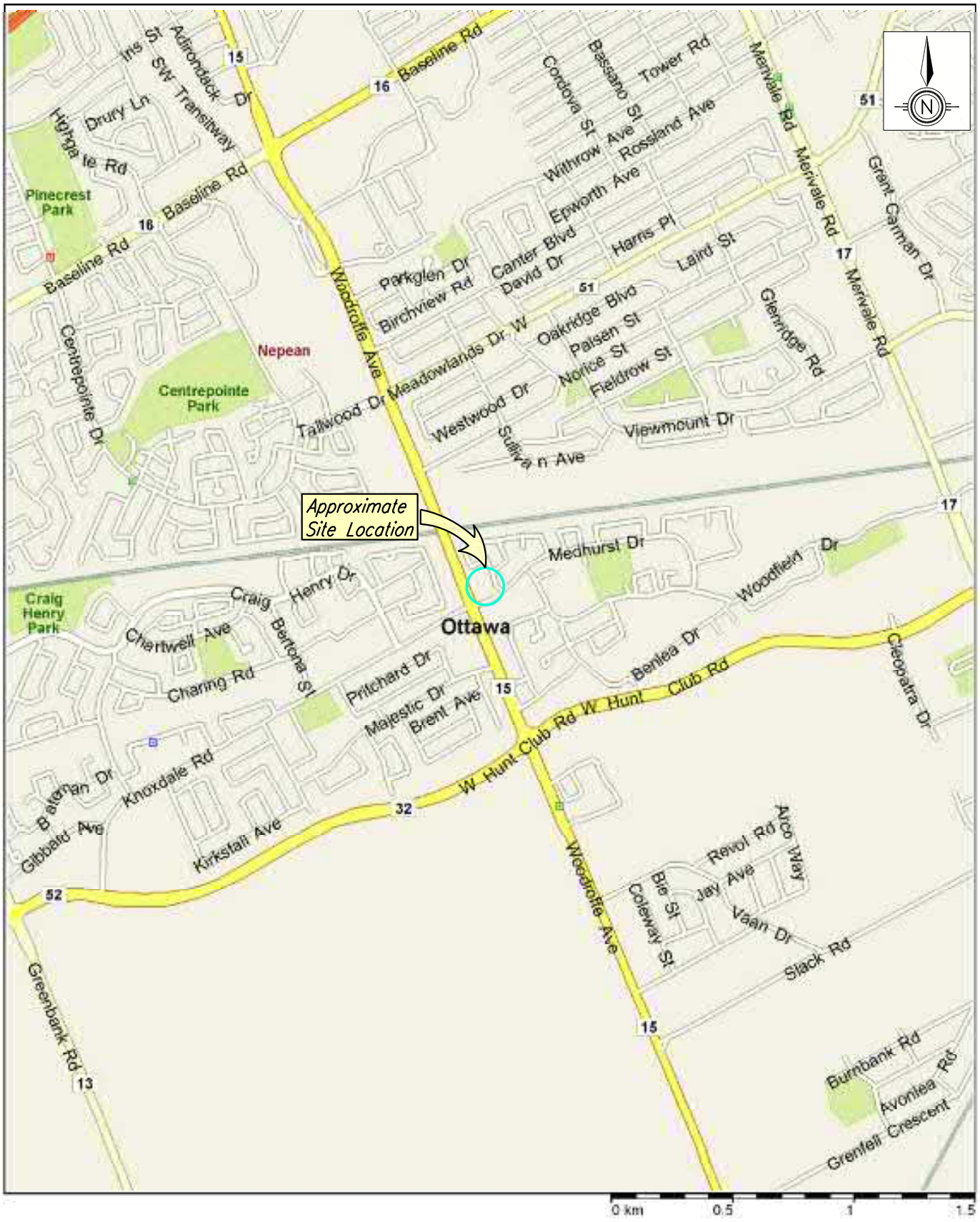
d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

Results for all parameters are reported in micrograms per litre (µg/L)

BOLD - Exceeds applicable standard

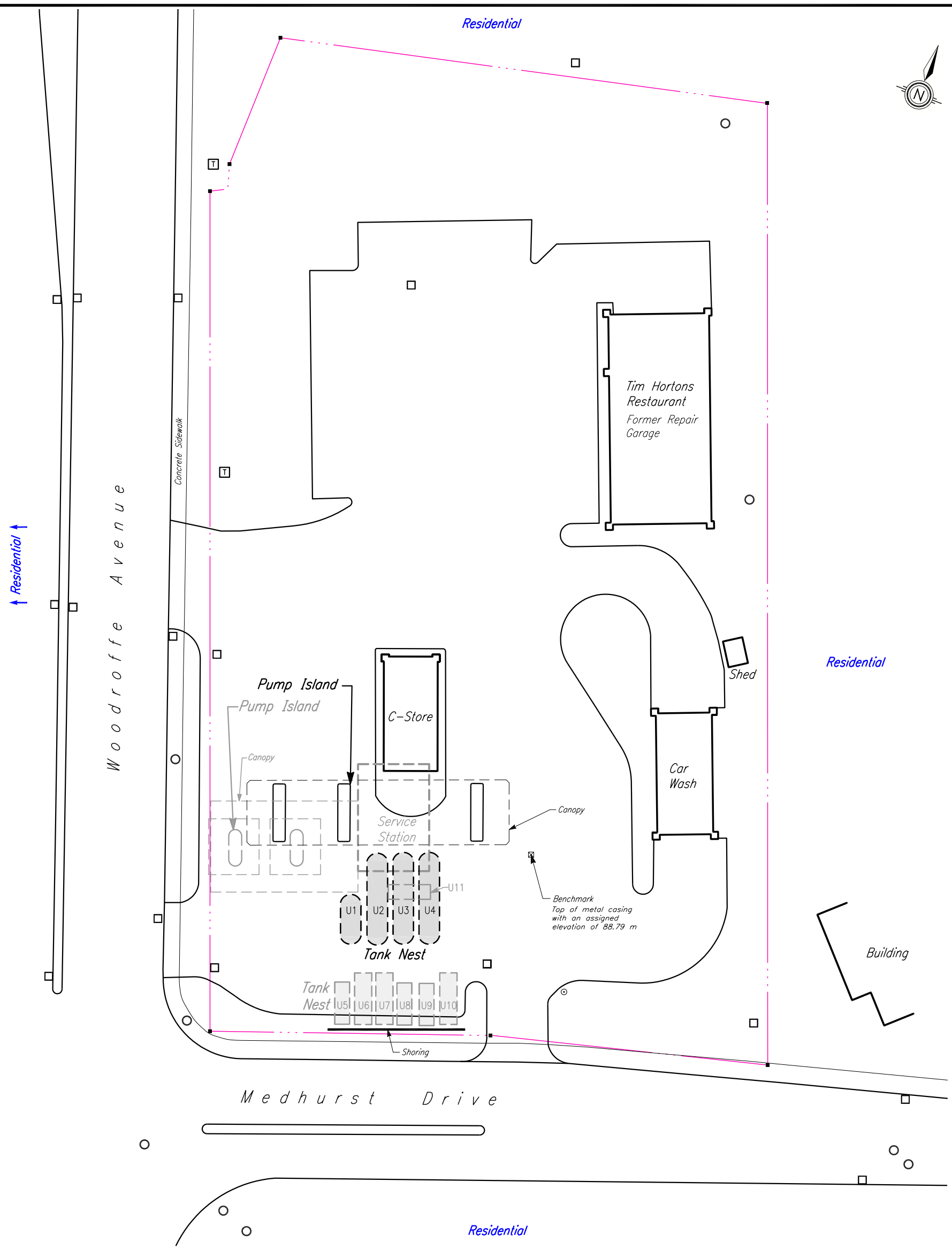


REFERENCE: Microsoft Streets and Trips, 2009.

Site Location Map

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: EHC	Page Size: 8.5 x 11 in.	Ref. No.: 10-8518T02
Reviewed: RVJB	File No.: 8518T086	Date: 2011/10/26
O'CONNOR ASSOCIATES		Drawing No.: 1



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Transformer (Pad Mounted)
- 2010/12/31 Date Format: yyyy/mm/dd

Utilities

- Catch Basin
- Manhole
- Utility Pole

Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U5	UST	13 600 L	Gasoline	Removed
U6	UST	22 700 L	Gasoline	Removed
U7	UST	22 700 L	Gasoline	Removed
U8	UST	13 600 L	Diesel	Removed
U9	UST	13 600 L	Gasoline	Removed
U10	UST	22 700 L	Gasoline	Removed
U11	UST	2 273 L	Furnace Oil	Removed

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

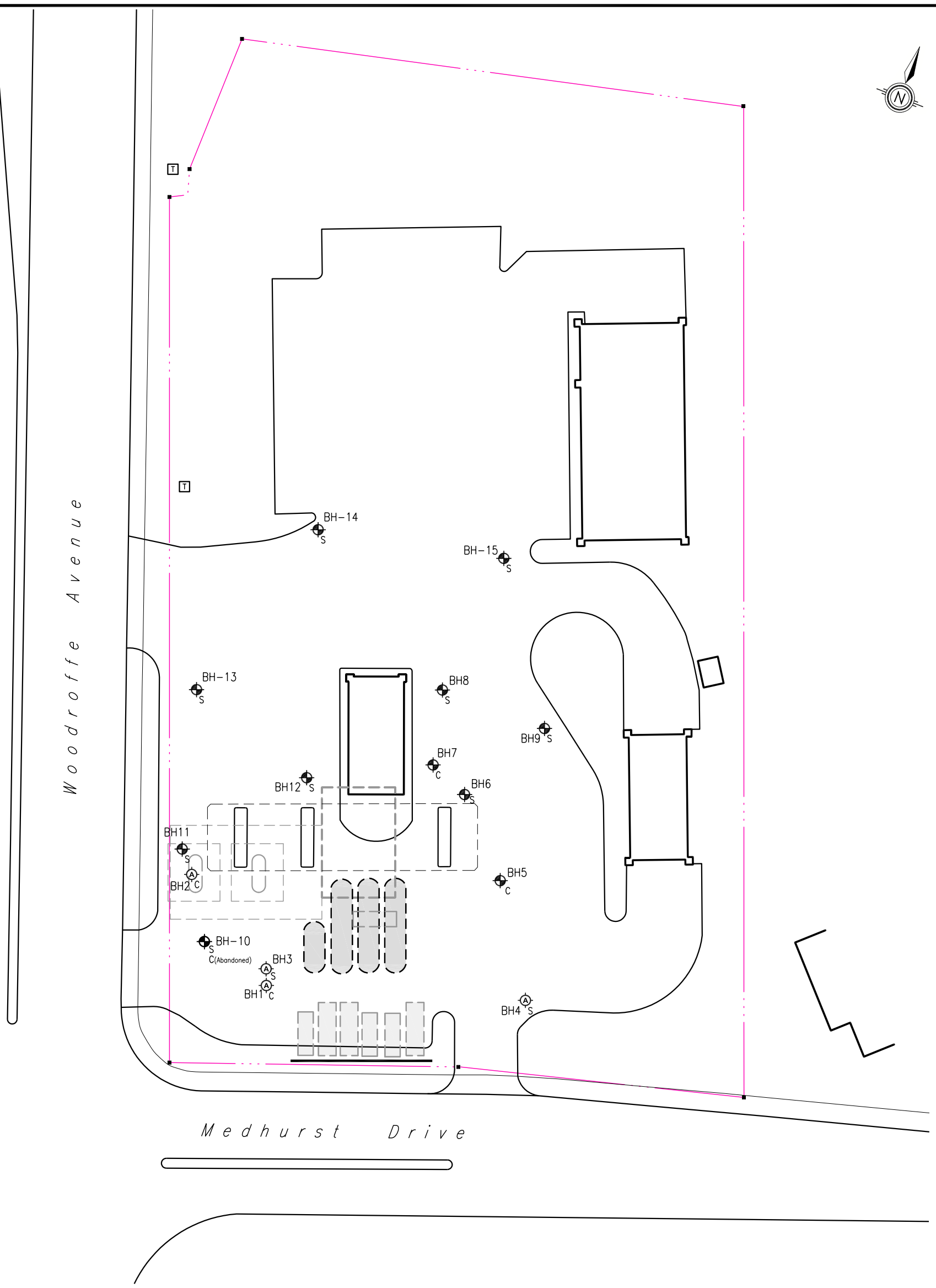
Original Scale 1:500

Site Plan

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: TFY	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: RVJB	File No.: 8518S089	Date: 2011/11/03
O'CONNOR ASSOCIATES		Drawing No.: 2

Ref.: S-34-P



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- S — Monitoring Well Screened in the Sand Layer
  - BH6 by O'Connor, 2008
  - BH8 to BH9, BH11 and BH12 by O'Connor, 2010
  - BH-10, BH-13 to BH-15 by O'Connor, 2011
- C — Monitoring Well Screened in the Clay and/or Silt Layer
  - BH5 and BH7 by O'Connor, 2008
- A S — Abandoned Monitoring Well Screened in the Sand Layer
  - BH3 and BH4 by O'Connor, 2009
- A C — Abandoned Monitoring Well Screened in the Clay and/or Silt Layer
  - BH1 and BH2 by O'Connor, 2009
  - BH10 by O'Connor, 2011

2010/12/31 Date Format: yyyy/mm/dd

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

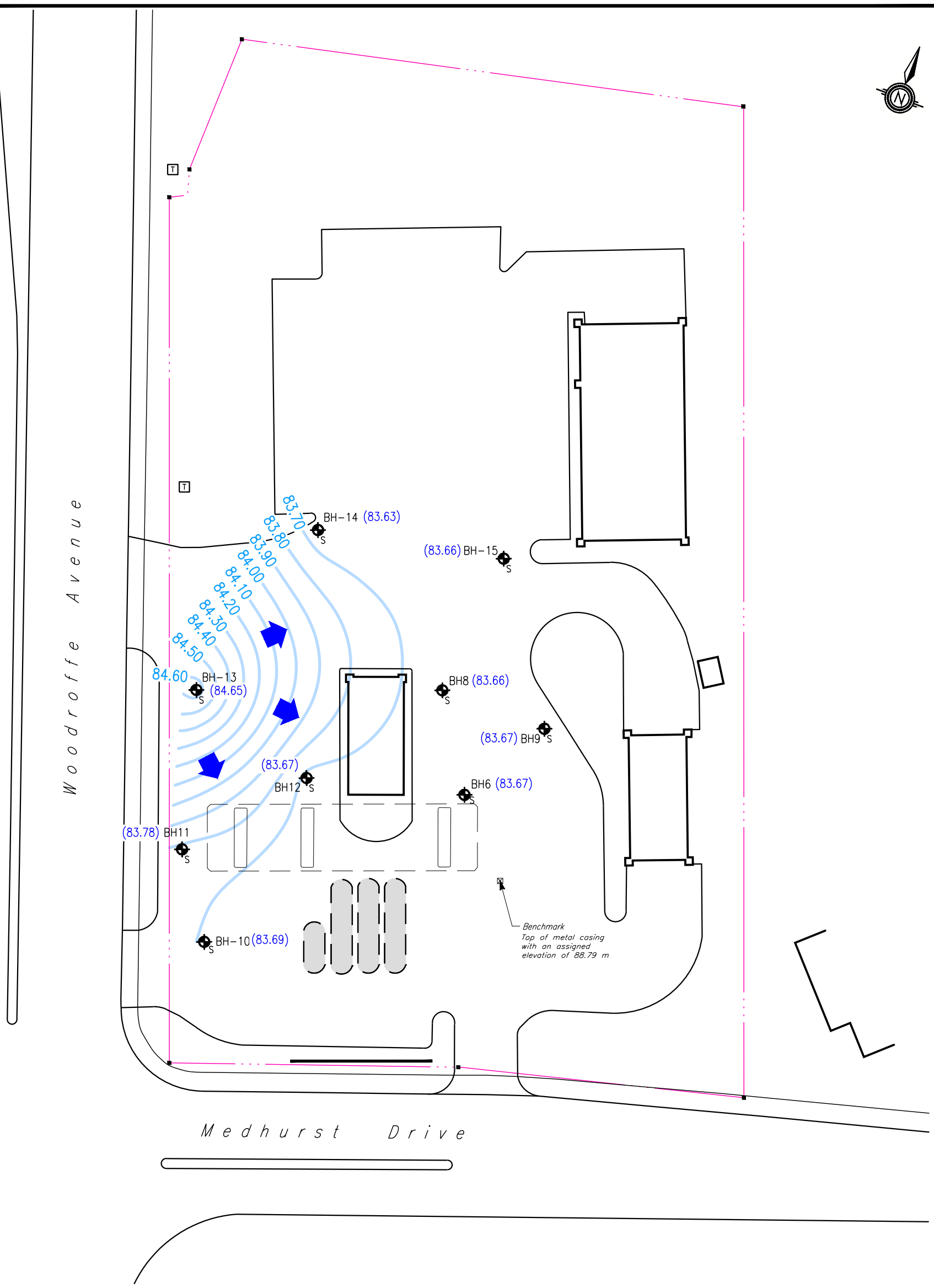
Original Scale 1:500

Monitoring Well Location Plan

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: EHC	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: RVJB	File No.: 8518S090	Date: 2011/12/16
O'CONNOR ASSOCIATES		Drawing No.: 3

Ref.: S-34-P



LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- S — Monitoring Well Screened in the Sand Layer
  - BH6 by O'Connor, 2008
  - BH8 to BH9, BH11 and BH12 by O'Connor, 2010
  - BH-10, BH-13 to BH-15 by O'Connor, 2011
- 2010/12/31 — Date Format: yyyy/mm/dd
- Inferred Direction of Groundwater Flow
- 49.00 — Potentiometric Surface Contour with Elevation, metres
- (49.00) — Potentiometric Surface Elevation, metres
- (49.00)* — Value Not Used for Contouring

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

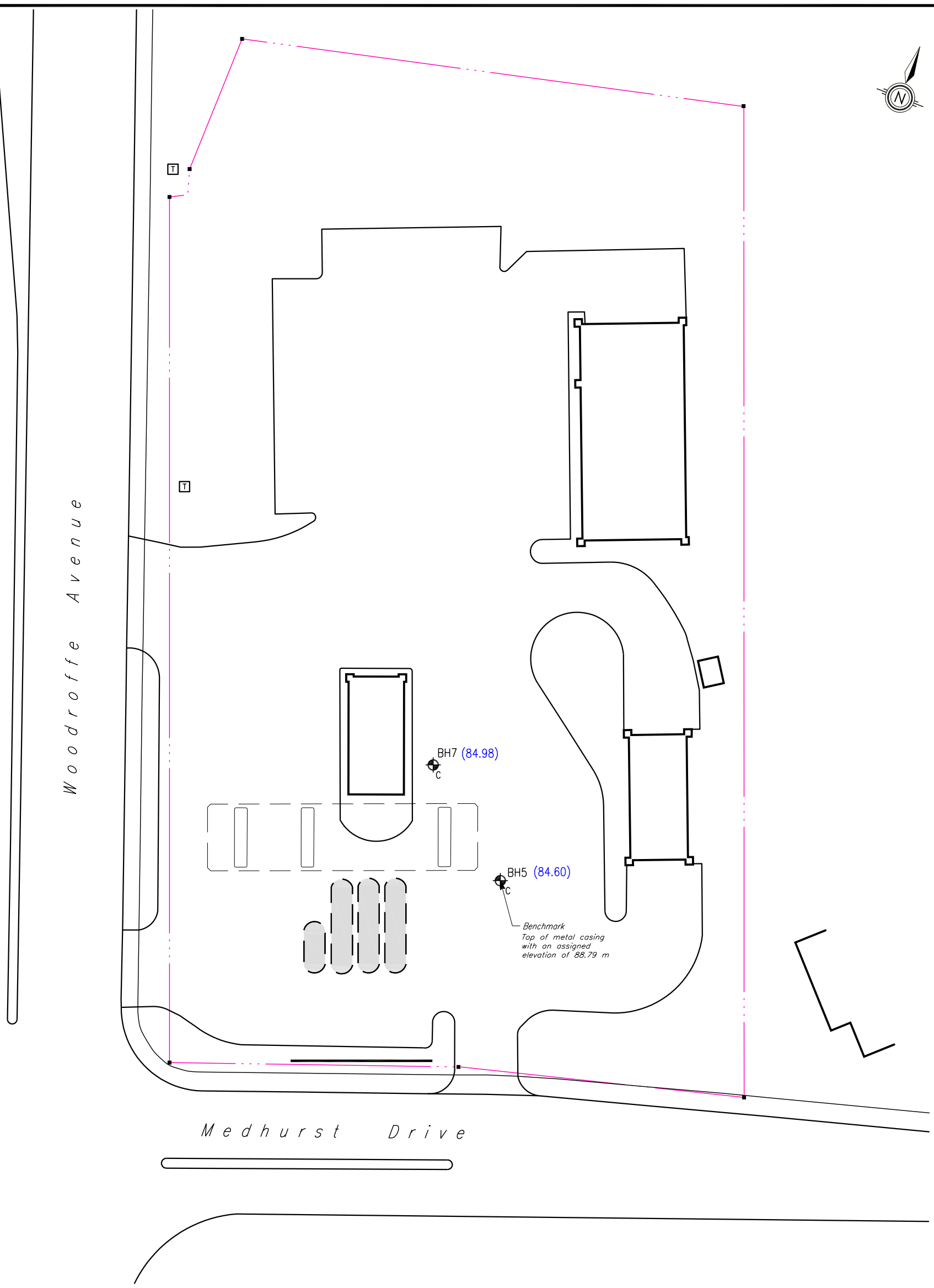
REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Elevation of the Groundwater Potentiometric Surface
Sand
2011/11/01
Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: EHC	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: RVJB	File No.: 8518M096	Date: 2011/12/16
O'CONNOR ASSOCIATES		Drawing No.: 4



LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- Transformer (Pad Mounted)
- Monitoring Well Screened in the Clay and/or Silt Layer
  BH5 and BH7 by O'Connor, 2008
- 2010/12/31 Date Format: yyyy/mm/dd
- (49.00) Potentiometric Surface Elevation, metres
- (49.00)* Value Not Used for Contouring

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

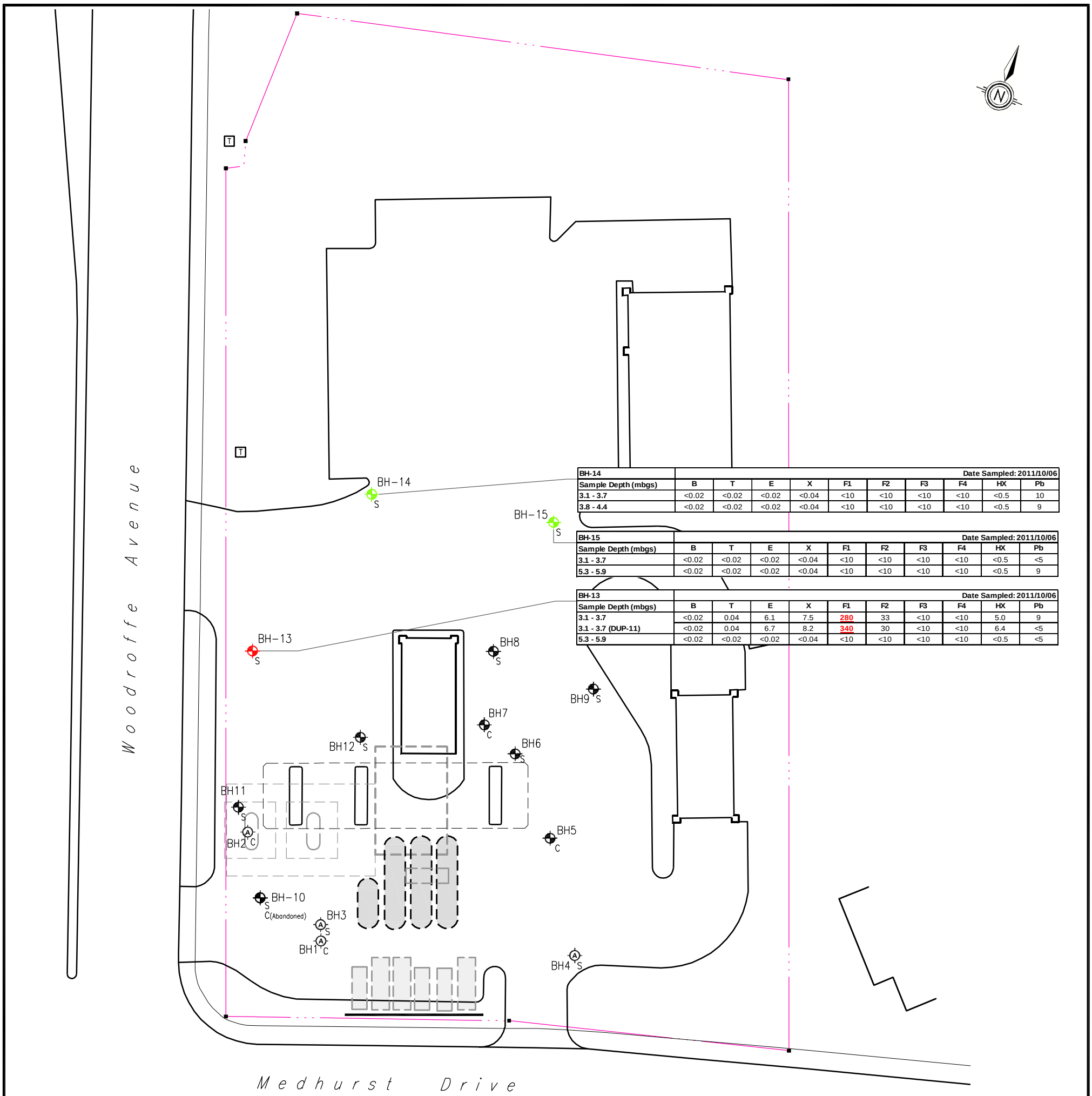
REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Elevation of the Groundwater Potentiometric Surface
Clay/Silt
2011/11/01
Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: EHC	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: RVJB	File No.: 8518M092	Date: 2011/12/16
O'CONNOR ASSOCIATES		Drawing No.: 5



BH-14	Date Sampled: 2011/10/06									
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	HX	Pb
3.1 - 3.7	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<0.5	10
3.8 - 4.4	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<0.5	9

BH-15	Date Sampled: 2011/10/06									
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	HX	Pb
3.1 - 3.7	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<0.5	<5
5.3 - 5.9	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<0.5	9

BH-13	Date Sampled: 2011/10/06									
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	HX	Pb
3.1 - 3.7	<0.02	0.04	6.1	7.5	**280**	33	<10	<10	5.0	9
3.1 - 3.7 (DUP-11)	<0.02	0.04	6.7	8.2	**340**	30	<10	<10	6.4	<5
5.3 - 5.9	<0.02	<0.02	<0.02	<0.04	<10	<10	<10	<10	<0.5	<5

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- S — Monitoring Well Screened in the Sand Layer
  - BH6 by O'Connor, 2008
  - BH8 to BH9, BH11 and BH12 by O'Connor, 2010
  - BH-10, BH-13 to BH-15 by O'Connor, 2011
- C — Monitoring Well Screened in the Clay and/or Silt Layer
  - BH5 and BH7 by O'Connor, 2008
- A S — Abandoned Monitoring Well Screened in the Sand Layer
  - BH3 and BH4 by O'Connor, 2009
- A C — Abandoned Monitoring Well Screened in the Clay and/or Silt Layer
  - BH1 and BH2 by O'Connor, 2009
  - BH10 by O'Connor, 2011
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/g — Micrograms Per Gram, dry weight basis

Analytical Results

- All Results Reported in µg/g
- Location Where All Soil Samples Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where At Least One Soil Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- **1234** — Exceedances of Standards, Shown in Red and Bold
- DUP — Field Duplicate Sample
- < — Result Less Than Reportable Detection Limit

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	HX	Pb
Standard* µg/g	0.4	78	19	30	65	250	2500	6600	88	120

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **HX**-Hexane **Pb**-Lead

* **MOE Table 3 (2011)** Industrial/commercial/community property use, medium and fine textured soils

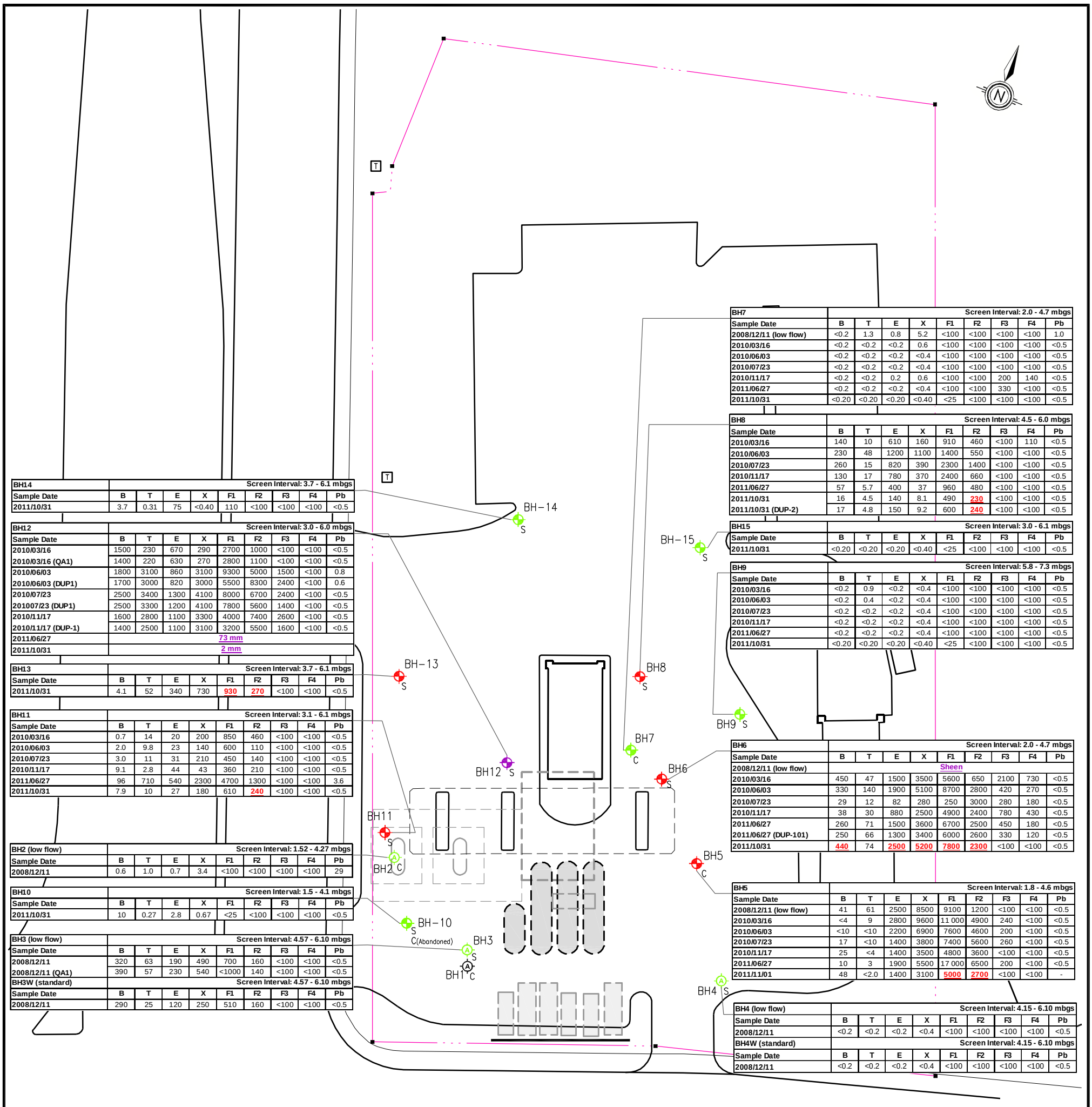
Soil Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead

Imperial Oil

1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: EHC	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: RVJB	File No.: 8518B091	Date: 2011/12/16
O'CONNOR ASSOCIATES		Drawing No.: 6

Ref.: S-34-P



BH14	Screen Interval: 3.7 - 6.1 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2011/10/31	3.7	0.31	75	<0.40	110	<100	<100	<100	<0.5

BH12	Screen Interval: 3.0 - 6.0 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010/03/16	1500	230	670	290	2700	1000	<100	<100	<0.5
2010/03/16 (QA1)	1400	220	630	270	2800	1100	<100	<100	<0.5
2010/06/03	1800	3100	860	3100	9300	5000	1500	<100	0.8
2010/06/03 (DUP1)	1700	3000	820	3000	5500	8300	2400	<100	0.6
2010/07/23	2500	3400	1300	4100	8000	6700	2400	<100	<0.5
201007/23 (DUP1)	2500	3300	1200	4100	7800	5600	1400	<100	<0.5
2010/11/17	1600	2800	1100	3300	4000	7400	2600	<100	<0.5
2010/11/17 (DUP-1)	1400	2500	1100	3100	3200	5500	1600	<100	<0.5
2011/06/27	73 mm								
2011/10/31	2 mm								

BH13	Screen Interval: 3.7 - 6.1 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2011/10/31	4.1	52	340	730	930	270	<100	<100	<0.5

BH11	Screen Interval: 3.1 - 6.1 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010/03/16	0.7	14	20	200	850	460	<100	<100	<0.5
2010/06/03	2.0	9.8	23	140	600	110	<100	<100	<0.5
2010/07/23	3.0	11	31	210	450	140	<100	<100	<0.5
2010/11/17	9.1	2.8	44	43	360	210	<100	<100	<0.5
2011/06/27	96	710	540	2300	4700	1300	<100	<100	3.6
2011/10/31	7.9	10	27	180	610	240	<100	<100	<0.5

BH2 (low flow)	Screen Interval: 1.52 - 4.27 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11	0.6	1.0	0.7	3.4	<100	<100	<100	<100	29

BH10	Screen Interval: 1.5 - 4.1 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2011/10/31	10	0.27	2.8	0.67	<25	<100	<100	<100	<0.5

BH3 (low flow)	Screen Interval: 4.57 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11	320	63	190	490	700	160	<100	<100	<0.5
2008/12/11 (QA1)	390	57	230	540	<1000	140	<100	<100	<0.5
BH3W (standard)	Screen Interval: 4.57 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11	290	25	120	250	510	160	<100	<100	<0.5

BH7	Screen Interval: 2.0 - 4.7 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11 (low flow)	<0.2	1.3	0.8	5.2	<100	<100	<100	<100	1.0
2010/03/16	<0.2	<0.2	<0.2	0.6	<100	<100	<100	<100	<0.5
2010/06/03	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5
2010/11/17	<0.2	<0.2	0.2	0.6	<100	<100	200	140	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	330	<100	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<0.5

BH8	Screen Interval: 4.5 - 6.0 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010/03/16	140	10	610	160	910	460	<100	110	<0.5
2010/06/03	230	48	1200	1100	1400	550	<100	<100	<0.5
2010/07/23	260	15	820	390	2300	1400	<100	<100	<0.5
2010/11/17	130	17	780	370	2400	660	<100	<100	<0.5
2011/06/27	57	5.7	400	37	960	480	<100	<100	<0.5
2011/10/31	16	4.5	140	8.1	490	230	<100	<100	<0.5
2011/10/31 (DUP-2)	17	4.8	150	9.2	600	240	<100	<100	<0.5

BH15	Screen Interval: 3.0 - 6.1 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<0.5

BH9	Screen Interval: 5.8 - 7.3 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2010/03/16	<0.2	0.9	<0.2	<0.4	<100	<100	<100	<100	<0.5
2010/06/03	<0.2	0.4	<0.2	<0.4	<100	<100	<100	<100	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5
2010/11/17	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<0.5

BH6	Screen Interval: 2.0 - 4.7 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11 (low flow)	Sheen								
2010/03/16	450	47	1500	3500	5600	650	2100	730	<0.5
2010/06/03	330	140	1900	5100	8700	2800	420	270	<0.5
2010/07/23	29	12	82	280	250	3000	280	180	<0.5
2010/11/17	38	30	880	2500	4900	2400	780	430	<0.5
2011/06/27	260	71	1500	3600	6700	2500	450	180	<0.5
2011/06/27 (DUP-101)	250	66	1300	3400	6000	2600	330	120	<0.5
2011/10/31	440	74	2500	5200	7800	2300	<100	<100	<0.5

BH5	Screen Interval: 1.8 - 4.6 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11 (low flow)	41	61	2500	8500	9100	1200	<100	<100	<0.5
2010/03/16	<4	9	2800	9600	11 000	4900	240	<100	<0.5
2010/06/03	<10	<10	2200	6900	7600	4600	200	<100	<0.5
2010/07/23	17	<10	1400	3800	7400	5600	260	<100	<0.5
2010/11/17	25	<4	1400	3500	4800	3600	<100	<100	<0.5
2011/06/27	10	3	1900	5500	17 000	6500	200	<100	<0.5
2011/11/01	48	<2.0	1400	3100	5000	2700	<100	<100	-

BH4 (low flow)	Screen Interval: 4.15 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5
BH4W (standard)	Screen Interval: 4.15 - 6.10 mbgs								
Sample Date	B	T	E	X	F1	F2	F3	F4	Pb
2008/12/11	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	<0.5

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- T — Transformer (Pad Mounted)
- S — Monitoring Well Screened in the Sand Layer
  - BH6 by O'Connor, 2008
  - BH8 to BH9, BH11 and BH12 by O'Connor, 2010
  - BH–10, BH–13 to BH–15 by O'Connor, 2011
- C — Monitoring Well Screened in the Clay and/or Silt Layer
  - BH5 and BH7 by O'Connor, 2008
- A S — Abandoned Monitoring Well Screened in the Sand Layer
  - BH3 and BH4 by O'Connor, 2009
- A C — Abandoned Monitoring Well Screened in the Clay and/or Silt Layer
  - BH1 and BH2 by O'Connor, 2009
  - BH10 by O'Connor, 2011
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- mm — Millimetres
- µg/L — Micrograms Per Litre

Analytical Results

- All Results Reported in µg/L
- Location Where Most Recent Groundwater Sample Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where Most Recent Groundwater Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple
- 1234 — Exceedances of Standards, Shown in Red and Bold
- 1234 mm, Sheen — Free Product Apparent Thickness (in mm), or Sheen, Shown in Purple and Bold
- DUP — Field Duplicate Sample
- – — Not Analyzed
- < — Result Less Than Reportable Detection Limit

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	Pb
Standard* µg/L	12 000	37 000	50 000	35 000	NS	NS	NS	NS	32
Standard** µg/L	430	18 000	2300	4200	750	150	500	500	25

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Pb**-Lead

* **MOE Table 3 (2004)** All types of property use, medium and fine textured soils.

** **MOE Table 3 (2011)** All types of property use, medium and fine textured soils.

NS No standard

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters and Lead

Imperial Oil

1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: EHC	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: RVJB	File No.: 8518G094	Date: 2011/12/16
O'CONNOR ASSOCIATES		Drawing No.: 7

Ref.: S-34-P

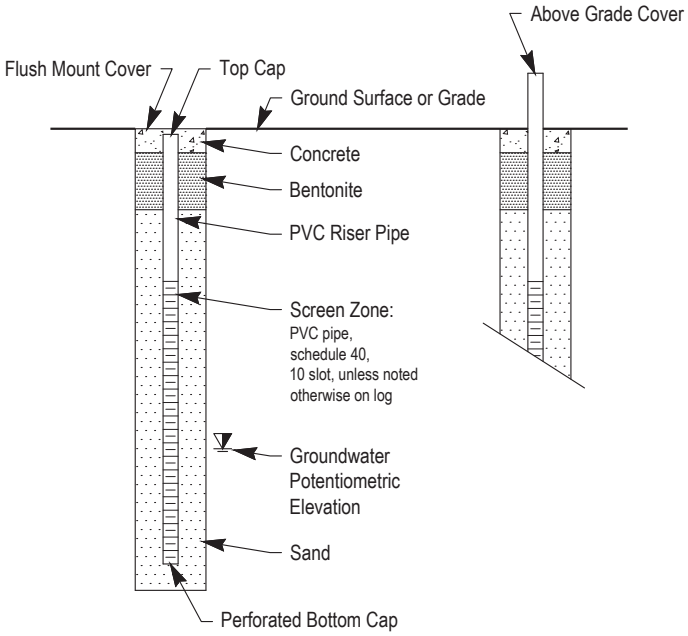
APPENDIX A

BOREHOLE LOGS

BOREHOLE LOG LEGEND

Overburden

Monitoring Well Details [a]



Backfill Legend

- Asphalt
- Concrete
- Bentonite
- Gravel
- Sand [b]
- Slough
- Drill Cuttings

Notes

a A generalized representation to show well construction depicted on logs. Refer to log for specific well construction and backfill details.

b #2 well pack silica sand

Sample Type

DC	Drill Cutting
G	Grab
SL	Sleeved Tube
SS	Split Spoon
ST	Shelby Tube
OS	Other

'N' Value is determined from a Standard Penetration Test. R represents a blow count of 50 or greater for a drive distance of 150 mm or less.

Soil Symbol Legend

- Asphalt
- Boulders
- Cobbles
- Gravel
- Sand
- Silt
- Clay
- Topsoil
- Concrete
- Sandy Gravel
- Gravelly Sand
- Sandy Silt
- Sandy Clay
- Peat
- Other Constructed Layer
- Sand and Gravel
- Silty Sand
- Clayey Silt
- Silty Clay
- Organic Soil

BOREHOLE LOG

PROJECT: Environmental Site Assessment	REF. NO: 10-8518T02	BOREHOLE NO: **BH-10**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.46 m	START DATE: 2011/10/06
CLIENT: Imperial Oil Limited	GRADE ELEV.: 88.56 m	COMPLETION DATE: 2011/10/06
BENCHMARK: Top of metal casing BH5(C) ASSIGNED ELEVATION: 88.79 m (Refer to Site Plan for location)		PAGE 1 of 1

Depth (m) Water Level	STRATIGRAPHY	SYMBOL	SAMPLING: NUMBER	SAMPLE TYPE	'N' VALUE	RECOVERY %	SAMPLE NAME/ LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	ASPHALT (Fill)											
	GRAVEL (Fill) - gray, coarse grained, some sand and silt, damp											
1												
	PEAT - black, fine grained, trace silt, damp, petroleum odour											
2	SILT - dark gray, fine grained, clayey, some gravel, damp											
	- olive, sandy, moist											
	- gray, clayey											
3												
4	SAND - gray, coarse grained, wet											
5										Groundwater Potentiometric Surface on 2011/10/31		
6										This monitoring well replaces that of BH10(C)		
	END OF BOREHOLE AT 6.1 m									Monitoring Well Installed, Screened from 3.7 m to 6.1 m		
7												
8												
9												
10												

O'CONNOR ASSOCIATES	LOGGED BY: LC	EQUIPMENT: CME-55	DAYLIGHTING TO: : n/a
	REVIEWED BY: RVJB	METHOD: Hollow Stem Auger	WELL DIA.: 51 mm
	DRAFTED BY: EHC	GAS METER TYPE: GasTech 1238ME	BOREHOLE DIA.: 21 cm

OAEI REPORT LOG 25 BH-OB 8518T02 BH-13 TO BH-15.GPJ SOIL LOG (REV 3).GDT 12/20/2011

BOREHOLE LOG

PROJECT: Environmental Site Assessment	REF. NO: 10-8518T02	BOREHOLE NO: **BH-13**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.42 m	START DATE: 2011/10/06
CLIENT: Imperial Oil Limited	GRADE ELEV.: 88.49 m	COMPLETION DATE: 2011/10/06
BENCHMARK: Top of metal casing BH5(C) ASSIGNED ELEVATION: 88.79 m (Refer to Site Plan for location)		PAGE 1 of 1

Depth (m) Water Level	STRATIGRAPHY	SYMBOL	NUMBER	SAMPLE TYPE	'N' VALUE	RECOVERY %	SAMPLE NAME/ LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	ASPHALT											
	GRAVEL (Fill) - brown, coarse grained, some sand, trace silt, damp - cobbles below 0.3 m		1	G	-	-						
1			2	G	-	-						
	SILT - olive, sandy, damp - peat from 1.5 to 1.7 m		3	SS	2	63						5
2	SAND - light brown to gray, coarse to medium grained, silty, damp		4	SS	3	83						
3	SILT - dark gray, some sand, wet - petroleum odour at 3.1 m		5	SS	1	100	BH-13-3.1-3.7 (DUP-1) /BTEX, PHC F1-F4, Pb, Hexane					10
4			6	SS	5	83				Groundwater Potentiometric Surface on 2011/10/31		15
5			7	SS	5	75						
	SAND - gray, coarse to medium grained, damp		8	SS	3	80	BH-13-5.3-5.9 /BTEX, PHC F1-F4, Pb, Hexane					20
6	END OF BOREHOLE AT 6.1 m									Monitoring Well Installed, Screened from 3.7 m to 6.1 m		
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES	LOGGED BY: MWM	EQUIPMENT: CME-55	DAYLIGHTING TO: 1.2 m
	REVIEWED BY: RVJB	METHOD: Hollow Stem Auger	WELL DIA.: 51 mm
	DRAFTED BY: EHC	GAS METER TYPE: GasTech 1238ME	BOREHOLE DIA.: 21 cm

OAEI REPORT LOG 25 BH-OB 8518T02 BH-13 TO BH-15.GPJ SOIL LOG (REV 3).GDT 12/20/2011

BOREHOLE LOG

PROJECT: Environmental Site Assessment	REF. NO: 10-8518T02	BOREHOLE NO: **BH-14**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.77 m	START DATE: 2011/10/06
CLIENT: Imperial Oil Limited	GRADE ELEV.: 88.86 m	COMPLETION DATE: 2011/10/06
BENCHMARK: Top of metal casing BH5(C) ASSIGNED ELEVATION: 88.79 m (Refer to Site Plan for location)		PAGE 1 of 1

Depth (m) Water Level	STRATIGRAPHY	SYMBOL	NUMBER	SAMPLE TYPE	'N' VALUE	RECOVERY %	SAMPLE NAME/ LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	ASPHALT											0
	GRAVEL (Fill) - brown, damp		1	G	-	-						
	SILT - gray, sandy, damp - cobbles from 0.3 m to 1.1 m		2	G	-	-						
1												5
			3	SS	7	60						
2												
			4	SS	11	75						
	SAND - gray, medium to fine grained, silty, damp											
3												10
	SILT - gray, sandy and clayey, damp		5	SS	2	100	BH-14-3.1-3.7 / BTEX, PHC F1-F4, Pb, Hexane					
	SAND - gray, coarse to medium grained, wet											
4			6	SS	1	100	BH-14-3.8-4.4 / BTEX, PHC F1-F4, Pb, Hexane					15
			7	SS	1	100						
5	▼									Groundwater Potentiometric Surface on 2011/10/31		▼
			8	SS	8	8						
6	END OF BOREHOLE AT 6.1 m									Monitoring Well Installed, Screened from 3.7 m to 6.1 m		20
7												25
8												
9												30
10												

O'CONNOR ASSOCIATES	LOGGED BY: LC	EQUIPMENT: CME-55	DAYLIGHTING TO: 1.2 m
	REVIEWED BY: RVJB	METHOD: Hollow Stem Auger	WELL DIA.: 51 mm
	DRAFTED BY: EHC	GAS METER TYPE: GasTech 1238ME	BOREHOLE DIA.: 21 cm

OAEI REPORT LOG 25 BH-DB 8518T02 BH-13 TO BH-15.GPJ SOIL LOG (REV 3).GDT 12/20/2011

BOREHOLE LOG

PROJECT: Environmental Site Assessment	REF. NO: 10-8518T02	BOREHOLE NO: **BH-15**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.84 m	START DATE: 2011/10/06
CLIENT: Imperial Oil Limited	GRADE ELEV.: 88.94 m	COMPLETION DATE: 2011/10/06
BENCHMARK: Top of metal casing BH5(C) ASSIGNED ELEVATION: 88.79 m (Refer to Site Plan for location)		PAGE 1 of 1

Depth (m) Water Level	STRATIGRAPHY	SYMBOL	NUMBER	SAMPLE TYPE	'N' VALUE	RECOVERY %	SAMPLE NAME/ LAB ANALYSES	▲SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	ASPHALT											
	GRAVEL (Fill) - brown, damp - cobbles from 0.2 m to 0.5 m		1	G	-	-						
	SILT - gray, some sand, trace clay, damp		2	G	-	-						
1												
			3	G	-	-						5
2												
	SAND - gray, medium to fine grained, silty and clayey, trace gravel, damp		4	SS	9	80						
3												10
			5	SS	3	90	BH-15-3.1-3.7 / BTEX, PHC F1-F4, Pb, Hexane					
	SILT - gray, sandy and clayey, damp											
4			6	SS	3	100						15
			7	SS	1	100						
5										Groundwater Potentiometric Surface on 2011/10/31		
			8	SS	1	100	BH-15-5.3-5.9 / BTEX, PHC F1-F4, Pb, Hexane					
6	END OF BOREHOLE AT 6.1 m									Monitoring Well Installed, Screened from 3.0 m to 6.1 m		20
7												
												25
8												
9												30
10												

O'CONNOR ASSOCIATES	LOGGED BY: MWM	EQUIPMENT: CME-55	DAYLIGHTING TO: 1.8 m
	REVIEWED BY: RVJB	METHOD: Hollow Stem Auger	WELL DIA.: 51 mm
	DRAFTED BY: EHC	GAS METER TYPE: GasTech 1238ME	BOREHOLE DIA.: 21 cm

OAEI REPORT LOG 25 BH-OB 8518T02 BH-13 TO BH-15.GPJ SOIL LOG (REV 3).GDT 12/20/2011

APPENDIX B

MOE WELL REGISTRATION RECORD

Ontario — Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*: **A110675** BH-15

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 2

Master Well Owner's and Land Owner's Information

First Name	Last Name	E-mail Address
Imperial Oil		

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
90 Wynford Drive	Toronto	ON	M3C1K5	4164417866

Location and Construction of the Master Well in the Cluster

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
1545 Woodroffe Avenue			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Ottawa	Ontario	

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation:	
NAD 8 3	18	441100	5020412	Garmin	Etrex	Differentiated, specify	Undifferentiated ☒ Averaged

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	To
	Suface gravel			00	2.2
	Silt, sand			2.2	3,3
	Silt			3.3	6.1

Hole Details

Depth (Metres) From	To	Diameter (Centimetres)
0.00	6.1	20

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, specify
☐ Domestic ☐ Commercial ☐ Dewatering
☐ Livestock ☐ Municipal ☒ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☐ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☒ Other, specify HSA
☐ Rotary (Air) ☐ Driving

Status of Well

☒ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, specify
☐ Alteration (Construction) ☐ Abandoned, other, specify

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	To
5.1	PVC	SCHED 40	3.1	6.1

No Casing and Screen Used

Open Hole ☐ Yes ☒ No

Static Water Level Test

Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☒ Plastic

Outside Diameter (Centimetres)	Slot No.
5.8	

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0.00	3.00	Bentonite.	

Water Details

Water found at Depth ____ Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth ____ Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth ____ Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected ☐ Yes ☒ No — If no, provide reason:	Date Master Well Completed (yyyy/mm/dd)
Monitoring well	2011/10/06

Cluster Information *(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)*

Total Wells in Cluster	Please indicate Number of Cluster Well Information Log Sheets Submitted
4	
Total Wells on this Property: unknown	1

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.
☒ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

Signature of Technician/Contractor	Date (yyyy/mm/dd)
	2012/01/18

Master Well Owner's/Land Owner's consent to use Cluster Form

Signature	Date (yyyy/mm/dd)

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
George Downing Estate Drilling	1844

Business Address (Street No./Name, number, RR)	Municipality	Province	Postal Code	Business E-mail Address
410 rue principale	Grenville-sur-la-Rouge	Qc	J0V1B0	downing@hawk.igs.net

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician	Date Submitted (yyyy/mm/dd)
8192426469	Downing, Stephen	3326		2012/01/18

Ministry Use Only

Audit No.	Well Contractor No.
M 08754	
Date Received (yyyy/mm/dd)	Date of Inspection (yyyy/mm/dd)
Remarks	

1992 (11/2006)

Ministry's Copy

© Queen's Printer for Ontario, 2006

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)*: A110675

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Property Owner's Information

First Name	Last Name	Mailing Address (Street No./Name, RR)	Municipality
Imperial Oil		90 Wynford Drive	Toronto

Province	Postal Code	E-mail Address	Telephone No. (inc. area code)
ON	M3C1K5		4164411786

Cluster Well Information

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
1545 Woodroffe Avenue				

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation
Ottawa	Ontario		Garmin	Etrex	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify:

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	Screen Interval (metres) To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
BH 10	18	0441082	5020353	6.1	20	HSA	PVC	3.7	3.7	6.1	Bentonite				2011/10/06
BH 13	18	0441072	5020381	6.1	↓	↓	↓	3.7	3.7	6.1	↓				2011/10/06
BH 14	18	0441079	5020404	6.1	↓	↓	↓	3.7	3.7	6.1	↓				2011/10/06

Consent

Property Owner's Consent to use cluster form

Signature	Date (yyyy/mm/dd)

Consent to release additional information to the Director upon request

Signature of Technician/Contractor	Date (yyyy/mm/dd)
	2012/01/18

Date 1st Well in Cluster Constructed (yyyy/mm/dd)	Date Last Well in Cluster Constructed (yyyy/mm/dd)
2011/10/06	2011/10/06

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd	410 rue principale	Grenville-sur-la-Rouge	Qc

Postal Code	Business Telephone No. (inc. area code)	Well Contractor's Licence No.	Business E-mail Address
J0V1B0	8192426469	1844	downing@hawkins.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted (yyyy/mm/dd)	Signature of Technician
Stephen Downing	3326	2012/01/18	

Ministry Use Only

Date Received (yyyy/mm/dd)	Date Inspected (yyyy/mm/dd)
Audit No. C 13704	**Remarks**

1991 (11/2006)

Ministry's Copy

© Queen's Printer for Ontario, 2006

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS – SOIL AND GROUNDWATER

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 71993

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2011/10/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1F6815
Received: 2011/10/07, 17:44

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Laboratory Method	Method Primary reference
Dry, Grind & Sieve	7	CAM SOP-00405	EPA 3050B
Petroleum Hydro. CCME F1 & BTEX in Soil	8	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	7	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	7	CAM SOP-00408	EPA 6010
Moisture	7	CAM SOP-00445	McKeague 2nd ed 1978

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 71993

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2011/10/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1F6815
Received: 2011/10/07, 17:44

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

Encryption Key

Kudrat Cheema

18 Oct 2011 16:13:50 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

LEAD IN SOIL (SOIL)

Maxxam ID		LE6232	LE6233	LE6234	LE6235		
Sampling Date		2011/10/06 11:30	2011/10/06 11:30	2011/10/06 12:15	2011/10/06 13:30		
COC Number		71993	71993	71993	71993		
	Units	**BH-13-3.1-3.7**	**DUP-11**	**BH-13-5.3-5.9**	**BH-14-3.1-3.7**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	9	<5	<5	10	5	2648470

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		LE6236	LE6236	LE6237	LE6238		
Sampling Date		2011/10/06 13:45	2011/10/06 13:45	2011/10/06 15:45	2011/10/06 16:00		
COC Number		71993	71993	71993	71993		
	Units	**BH-14-3.8-4.4**	**BH-14-3.8-4.4 Lab-Dup**	**BH-15-3.1-3.7**	**BH-15-5.3-5.9**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	9	10	<5	9	5	2648470

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		LE6232	LE6232	LE6233	LE6234		
Sampling Date		2011/10/06 11:30	2011/10/06 11:30	2011/10/06 11:30	2011/10/06 12:15		
COC Number		71993	71993	71993	71993		
	Units	**BH-13-3.1-3.7**	**BH-13-3.1-3.7 Lab-Dup**	**DUP-11**	**BH-13-5.3-5.9**	**RDL**	**QC Batch**
Moisture	%	32	31	33	17	1	2646010
Benzene	ug/g	<0.02		<0.02	<0.02	0.02	2646949
Toluene	ug/g	0.04		0.04	<0.02	0.02	2646949
Ethylbenzene	ug/g	6.1		6.7	<0.02	0.02	2646949
o-Xylene	ug/g	0.57		0.61	<0.02	0.02	2646949
p+m-Xylene	ug/g	7.0		7.6	<0.04	0.04	2646949
Total Xylenes	ug/g	7.5		8.2	<0.04	0.04	2646949
Hexane	ug/g	5.0		6.4	<0.5	0.5	2646949
F1 (C6-C10)	ug/g	290		360	<10	10	2646949
F1 (C6-C10) - BTEX	ug/g	280		340	<10	10	2646949
F2 (C10-C16 Hydrocarbons)	ug/g	33		30	<10	10	2647557
F3 (C16-C34 Hydrocarbons)	ug/g	<10		<10	<10	10	2647557
F4 (C34-C50 Hydrocarbons)	ug/g	<10		<10	<10	10	2647557
Reached Baseline at C50	ug/g	Yes		Yes	Yes		2647557
Extraction Surrogate Recovery (%)							
D10-Ethylbenzene	%	102		111	101		2646949
o-Terphenyl	%	97		97	96		2647557
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	101		100	100		2646949
4-Bromofluorobenzene	%	99		99	96		2646949
D4-1,2-Dichloroethane	%	99		99	98		2646949

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		LE6235	LE6235	LE6236	LE6237		
Sampling Date		2011/10/06 13:30	2011/10/06 13:30	2011/10/06 13:45	2011/10/06 15:45		
COC Number		71993	71993	71993	71993		
	Units	**BH-14-3.1-3.7**	**BH-14-3.1-3.7 Lab-Dup**	**BH-14-3.8-4.4**	**BH-15-3.1-3.7**	**RDL**	**QC Batch**
Moisture	%	28		30	20	1	2646010
Benzene	ug/g	<0.02		<0.02	<0.02	0.02	2646949
Toluene	ug/g	<0.02		<0.02	<0.02	0.02	2646949
Ethylbenzene	ug/g	<0.02		<0.02	<0.02	0.02	2646949
o-Xylene	ug/g	<0.02		<0.02	<0.02	0.02	2646949
p+m-Xylene	ug/g	<0.04		<0.04	<0.04	0.04	2646949
Total Xylenes	ug/g	<0.04		<0.04	<0.04	0.04	2646949
Hexane	ug/g	<0.5		<0.5	<0.5	0.5	2646949
F1 (C6-C10)	ug/g	<10		<10	<10	10	2646949
F1 (C6-C10) - BTEX	ug/g	<10		<10	<10	10	2646949
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2647557
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2647557
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2647557
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2647557
Extraction Surrogate Recovery (%)							
D10-Ethylbenzene	%	99		97	92		2646949
o-Terphenyl	%	93	94	94	98		2647557
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	101		99	98		2646949
4-Bromofluorobenzene	%	96		97	96		2646949
D4-1,2-Dichloroethane	%	101		99	98		2646949

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		LE6237	LE6238		
Sampling Date		2011/10/06 15:45	2011/10/06 16:00		
COC Number		71993	71993		
	Units	**BH-15-3.1-3.7 Lab-Dup**	**BH-15-5.3-5.9**	**RDL**	**QC Batch**
Moisture	%		28	1	2646010
Benzene	ug/g	<0.02	<0.02	0.02	2646949
Toluene	ug/g	<0.02	<0.02	0.02	2646949
Ethylbenzene	ug/g	<0.02	<0.02	0.02	2646949
o-Xylene	ug/g	<0.02	<0.02	0.02	2646949
p+m-Xylene	ug/g	<0.04	<0.04	0.04	2646949
Total Xylenes	ug/g	<0.04	<0.04	0.04	2646949
Hexane	ug/g	<0.5	<0.5	0.5	2646949
F1 (C6-C10)	ug/g	<10	<10	10	2646949
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	2646949
F2 (C10-C16 Hydrocarbons)	ug/g		<10	10	2647557
F3 (C16-C34 Hydrocarbons)	ug/g		<10	10	2647557
F4 (C34-C50 Hydrocarbons)	ug/g		<10	10	2647557
Reached Baseline at C50	ug/g		Yes		2647557
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	96	94		2646949
o-Terphenyl	%		96		2647557
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	99	99		2646949
4-Bromofluorobenzene	%	98	95		2646949
D4-1,2-Dichloroethane	%	98	97		2646949

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		LE6239		
Sampling Date		2011/10/06 16:30		
COC Number		71993		
	Units	**FIELD BLANK-1**	**RDL**	**QC Batch**
Benzene	ug/g	<0.02	0.02	2646949
Toluene	ug/g	<0.02	0.02	2646949
Ethylbenzene	ug/g	<0.02	0.02	2646949
o-Xylene	ug/g	<0.02	0.02	2646949
p+m-Xylene	ug/g	<0.04	0.04	2646949
Total Xylenes	ug/g	<0.04	0.04	2646949
Hexane	ug/g	<0.5	0.5	2646949
F1 (C6-C10)	ug/g	<10	10	2646949
F1 (C6-C10) - BTEX	ug/g	<10	10	2646949
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	89		2646949
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	100		2646949
4-Bromofluorobenzene	%	94		2646949
D4-1,2-Dichloroethane	%	100		2646949

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LE6232 **Collected** 2011/10/06
Sample ID BH-13-3.1-3.7 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam ID LE6232 Dup **Collected** 2011/10/06
Sample ID BH-13-3.1-3.7 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam ID LE6233 **Collected** 2011/10/06
Sample ID DUP-11 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam ID LE6234 **Collected** 2011/10/06
Sample ID BH-13-5.3-5.9 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam ID LE6235 **Collected** 2011/10/06
Sample ID BH-14-3.1-3.7 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LE6235 Dup **Collected** 2011/10/06
Sample ID BH-14-3.1-3.7 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU

Maxxam ID LE6236 **Collected** 2011/10/06
Sample ID BH-14-3.8-4.4 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam ID LE6236 Dup **Collected** 2011/10/06
Sample ID BH-14-3.8-4.4 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI

Maxxam ID LE6237 **Collected** 2011/10/06
Sample ID BH-15-3.1-3.7 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam ID LE6237 Dup **Collected** 2011/10/06
Sample ID BH-15-3.1-3.7 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY

Maxxam ID LE6238 **Collected** 2011/10/06
Sample ID BH-15-5.3-5.9 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Total Metals Analysis by ICP	ICP	2648470	2011/10/14	2011/10/17	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LE6239 **Collected** 2011/10/06
Sample ID FIELD BLANK-1 **Shipped** 2011/10/06
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2646949	2011/10/08	2011/10/14	GALINA BAGLAY

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6815
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B1F6815

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2646949	GBA	Method Blank	1,4-Difluorobenzene	2011/10/14		100	%	60 - 140
			4-Bromofluorobenzene	2011/10/14		99	%	60 - 140
			D10-Ethylbenzene	2011/10/14		101	%	60 - 140
			D4-1,2-Dichloroethane	2011/10/14		99	%	60 - 140
			Benzene	2011/10/14	<0.02		ug/g	
			Toluene	2011/10/14	<0.02		ug/g	
			Ethylbenzene	2011/10/14	<0.02		ug/g	
			o-Xylene	2011/10/14	<0.02		ug/g	
			p+m-Xylene	2011/10/14	<0.04		ug/g	
			Total Xylenes	2011/10/14	<0.04		ug/g	
			Hexane	2011/10/14	<0.5		ug/g	
			F1 (C6-C10)	2011/10/14	<10		ug/g	
			F1 (C6-C10) - BTEX	2011/10/14	<10		ug/g	
2647557	ZZ	Method Blank	o-Terphenyl	2011/10/14		97	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/10/14	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2011/10/14	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2011/10/14	<10		ug/g	
2648470	SUK	Method Blank	Acid Extractable Lead (Pb)	2011/10/17	<5		ug/g	
2646010	BOP	RPD [LE6232-02]	Moisture	2011/10/13	1.9		%	20
2647557	ZZ	RPD [LE6235-02]	F2 (C10-C16 Hydrocarbons)	2011/10/15	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2011/10/15	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2011/10/15	NC		%	30
2648470	SUK	RPD [LE6236-01]	Acid Extractable Lead (Pb)	2011/10/17	NC		%	35
2646949	GBA	RPD [LE6237-03]	Benzene	2011/10/14	NC		%	50
			Toluene	2011/10/14	NC		%	50
			Ethylbenzene	2011/10/14	NC		%	50
			o-Xylene	2011/10/14	NC		%	50
			p+m-Xylene	2011/10/14	NC		%	50
			Total Xylenes	2011/10/14	NC		%	50
			Hexane	2011/10/14	NC		%	50
			F1 (C6-C10)	2011/10/14	NC		%	50
			F1 (C6-C10) - BTEX	2011/10/14	NC		%	50
		Matrix Spike [LE6236-03]	1,4-Difluorobenzene	2011/10/14		99	%	60 - 140
			4-Bromofluorobenzene	2011/10/14		98	%	60 - 140
			D10-Ethylbenzene	2011/10/14		101	%	60 - 140
			D4-1,2-Dichloroethane	2011/10/14		99	%	60 - 140
			Benzene	2011/10/14		82	%	60 - 140
			Toluene	2011/10/14		92	%	60 - 140
			Ethylbenzene	2011/10/14		99	%	60 - 140
			o-Xylene	2011/10/14		100	%	60 - 140
			p+m-Xylene	2011/10/14		95	%	60 - 140
			Hexane	2011/10/14		64	%	60 - 140
			F1 (C6-C10)	2011/10/14		80	%	60 - 140
2647557	ZZ	Matrix Spike [LE6235-02]	o-Terphenyl	2011/10/15		92	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/10/15		90	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2011/10/15		97	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2011/10/15		102	%	50 - 130
2648470	SUK	Matrix Spike [LE6236-01]	Acid Extractable Lead (Pb)	2011/10/17		99	%	75 - 125
2646949	GBA	LCS	1,4-Difluorobenzene	2011/10/14		110	%	60 - 140
			4-Bromofluorobenzene	2011/10/14		101	%	60 - 140
			D10-Ethylbenzene	2011/10/14		100	%	60 - 140
			D4-1,2-Dichloroethane	2011/10/14		102	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B1F6815

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2646949	GBA	LCS	Benzene	2011/10/14		92	%	60 - 140
			Toluene	2011/10/14		96	%	60 - 140
			Ethylbenzene	2011/10/14		103	%	60 - 140
			o-Xylene	2011/10/14		100	%	60 - 140
			p+m-Xylene	2011/10/14		97	%	60 - 140
			Hexane	2011/10/14		102	%	60 - 140
			F1 (C6-C10)	2011/10/14		95	%	60 - 140
2647557	ZZ	LCS	o-Terphenyl	2011/10/14		91	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/10/14		90	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2011/10/14		96	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2011/10/14		100	%	70 - 130
2648470	SUK	SRM	Acid Extractable Lead (Pb)	2011/10/17		104	%	75 - 125

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.
SRM: A blank matrix sample to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
LCS: A blank matrix sample 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.

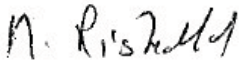
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

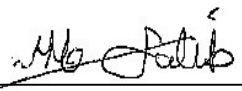
Maxxam Job #: B1F6815

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



MAMDOUH SALIB, Analyst, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 71993

INVOICE INFORMATION

Company Name: ☒ Imperial Oil ☐ ExxonMobil
Contact Name: Lorne Wedge
Address: 90 Wynford Dr. Toronto ON M3C 1K5
Email: r.lorne.wedge@esso.ca
Ph: 416-441-7866
Sampler Name (Print): LAILA CHALATI

REPORT INFORMATION

Company Name: O'Connor Associates
Contact Name: Nancy Hayward
Address: 5420 Canotek Rd unit 104 Ottawa Ontario K1J1E9
Email: nancy-hayward@oconnor-associates.com
Ph: 613-742-1781
Consultant Project #: 10-8518-T02

ANALYSIS REQUESTED

FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX, n-hexane	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	Limited sample recovery in 120mL jar - Proceed with analysis as is.
1 BH-13-3.1-3.7			X		4	11/10/06	11:30			X	X	X					X											X
2 DUP-11			X		4	11/10/06	11:30			X	X	X					X											X
3 BH-13-5.3-5.9			X		4	11/10/06	12:15			X	X	X					X											X
4 BH-14-3.1-3.7			X		4	11/10/06	13:30			X	X	X					X											X
5 BH-14-3.8-4.4			X		4	11/10/06	13:45			X	X	X					X											X
6 BH-15-3.1-3.7			X		4	11/10/06	15:45			X	X	X					X											X
7 BH-15-5.3-5.9			X		4	11/10/06	16:00			X	X	X					X											X
8 FIELD BLANK-1				X	2	11/10/06	16:30			X	X																	
9																												

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa
IOL SITE # (if applicable): 8800 1626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11064640

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO 1/c/c ☐ ODWS medline ground
☐ Other

SPECIAL INSTRUCTIONS
Test samples as per T.P.G
Lowest possible DLs required for VOCs
ZIE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1 2 3	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
2/3/4°C	INTACT	✓			INTACT				INTACT		

LAB USE ONLY
MAXXAM JOB #: B1F6815
SAMPLES: LABELED BY: T-L; VERIFIED BY: DKN

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2011/10/06	17:00	1. JIMMY LZH	2011/10/07	17:44
2.			2.		
3.			3.		

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2011/10/06

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B1F6815*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2011/10/20*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 71994

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2011/10/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1F6892
Received: 2011/10/07, 17:44

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	1	CAM SOP-00447	EPA 6020
Ignitability of a Sample (1)	1	CAM SOP-00432	EPA 1030
Moisture	1	CAM SOP-00445	McKeague 2nd ed 1978
Polychlorinated Biphenyl in Leachate	1	CAM SOP-00309	SW846 8082
TCLP - % Solids	1	CAM SOP-00401	EPA 1311 modified
TCLP - Extraction Fluid	1	CAM SOP-00401	EPA 1311 modified
TCLP - Initial and final pH	1	CAM SOP-00401	EPA 1311 modified
TCLP Zero Headspace Extraction	1	CAM SOP-00430	EPA 1311 modified
VOCs in ZHE Leachates	1	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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 71994

Attention: Nancy Haywood
O'Connor Associates Environmental Inc
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2011/10/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1F6892
Received: 2011/10/07, 17:44

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

(1) Ignitability is not an SCC accredited test.

Encryption Key

Kudrat Cheema

18 Oct 2011 13:34:42 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

O'REG 153 ICPMS METALS (SOIL)

Maxxam ID		LE6509		
Sampling Date		2011/10/06 16:15		
COC Number		71994		
	Units	**WC-1545**	**RDL**	**QC Batch**
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	2648123
Acid Extractable Arsenic (As)	ug/g	1	1	2648123
Acid Extractable Barium (Ba)	ug/g	170	0.5	2648123
Acid Extractable Beryllium (Be)	ug/g	0.4	0.2	2648123
Acid Extractable Boron (B)	ug/g	<5	5	2648123
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	2648123
Acid Extractable Chromium (Cr)	ug/g	32	1	2648123
Acid Extractable Cobalt (Co)	ug/g	8.8	0.1	2648123
Acid Extractable Copper (Cu)	ug/g	21	0.5	2648123
Acid Extractable Lead (Pb)	ug/g	8	1	2648123
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	2648123
Acid Extractable Nickel (Ni)	ug/g	19	0.5	2648123
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	2648123
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2648123
Acid Extractable Thallium (Tl)	ug/g	0.21	0.05	2648123
Acid Extractable Uranium (U)	ug/g	0.67	0.05	2648123
Acid Extractable Vanadium (V)	ug/g	40	5	2648123
Acid Extractable Zinc (Zn)	ug/g	52	5	2648123

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		LE6509	LE6509		
Sampling Date		2011/10/06 16:15	2011/10/06 16:15		
COC Number		71994	71994		
	Units	**WC-1545**	**WC-1545 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	16		1	2646010
Benzene	ug/g	<0.02	<0.02	0.02	2647249
Toluene	ug/g	<0.02	<0.02	0.02	2647249
Ethylbenzene	ug/g	<0.02	<0.02	0.02	2647249
o-Xylene	ug/g	<0.02	<0.02	0.02	2647249
p+m-Xylene	ug/g	<0.04	<0.04	0.04	2647249
Total Xylenes	ug/g	<0.04	<0.04	0.04	2647249
F1 (C6-C10)	ug/g	<10	<10	10	2647249
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	2647249
F2 (C10-C16 Hydrocarbons)	ug/g	<10		10	2647557
F3 (C16-C34 Hydrocarbons)	ug/g	32		10	2647557
F4 (C34-C50 Hydrocarbons)	ug/g	53		10	2647557
Reached Baseline at C50	ug/g	Yes			2647557
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	102	100		2647249
o-Terphenyl	%	96			2647557
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105	107		2647249
4-Bromofluorobenzene	%	104	102		2647249
D4-1,2-Dichloroethane	%	105	106		2647249

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

O'REG 558 TCLP VOLATILE ORGANICS (SOIL)

Maxxam ID		LE6509	LE6509		
Sampling Date		2011/10/06 16:15	2011/10/06 16:15		
COC Number		71994	71994		
	Units	**WC-1545**	**WC-1545 Lab-Dup**	**RDL**	**QC Batch**
Amount Extracted (Wet Weight) (g)	N/A	25	25	N/A	2644121
Leachable Benzene	mg/L	<0.02	<0.02	0.02	2645348
Leachable Carbon Tetrachloride	mg/L	<0.02	<0.02	0.02	2645348
Leachable Chlorobenzene	mg/L	<0.02	<0.02	0.02	2645348
Leachable Chloroform	mg/L	<0.02	<0.02	0.02	2645348
Leachable 1,2-Dichlorobenzene	mg/L	<0.05	<0.05	0.05	2645348
Leachable 1,4-Dichlorobenzene	mg/L	<0.05	<0.05	0.05	2645348
Leachable 1,2-Dichloroethane	mg/L	<0.05	<0.05	0.05	2645348
Leachable 1,1-Dichloroethylene	mg/L	<0.02	<0.02	0.02	2645348
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.2	<0.2	0.2	2645348
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1	<1	1	2645348
Leachable Tetrachloroethylene	mg/L	<0.02	<0.02	0.02	2645348
Leachable Trichloroethylene	mg/L	<0.02	<0.02	0.02	2645348
Leachable Vinyl Chloride	mg/L	<0.02	<0.02	0.02	2645348
Instrument Surrogate Recovery (%)					
Leachable 4-Bromofluorobenzene	%	94	94		2645348
Leachable D4-1,2-Dichloroethane	%	101	99		2645348
Leachable D8-Toluene	%	98	94		2645348

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

O'REG 558 TCLP LEACHATE PREPARATION (SOIL)

Maxxam ID		LE6509		
Sampling Date		2011/10/06 16:15		
COC Number		71994		
	Units	**WC-1545**	**RDL**	**QC Batch**
Final pH	pH	6.02		2648851
Initial pH	pH	8.86		2648851
TCLP - % Solids	%	100	0.2	2648846
TCLP Extraction Fluid	N/A	FLUID1		2648850

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		LE6509	LE6509		
Sampling Date		2011/10/06 16:15	2011/10/06 16:15		
COC Number		71994	71994		
	Units	**WC-1545**	**WC-1545 Lab-Dup**	**RDL**	**QC Batch**
Leachable Total PCB	mg/L	<0.003	<0.003	0.003	2648858
Extraction Surrogate Recovery (%)					
Leachable 2,4,5,6-Tetrachloro-m-xylene	%	96	93		2648858
Leachable Decachlorobiphenyl	%	115	118		2648858

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

MISCELLANEOUS (SOIL)

Maxxam ID		LE6509	LE6509	
Sampling Date		2011/10/06 16:15	2011/10/06 16:15	
COC Number		71994	71994	
	Units	**WC-1545**	**WC-1545 Lab-Dup**	**QC Batch**
Ignitability	N/A	NF/NI	NF/NI	2649714

QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LE6509 **Collected** 2011/10/06
Sample ID WC-1545 **Shipped** 2011/10/07
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2647249	2011/10/08	2011/10/14	ANCA GANEA
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2647557	2011/10/14	2011/10/15	ZHIYUE (FRANK) ZHU
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	2648123	2011/10/14	2011/10/14	KEVIN COMERFORD
Ignitability of a Sample	BAL	2649714	2011/10/17	2011/10/17	GAURAV KALIA
Moisture	BAL	2646010	N/A	2011/10/13	VALENTINA KAFTANI
Polychlorinated Biphenyl in Leachate	GC/ECD	2648858	2011/10/15	2011/10/17	JOY ZHANG
TCLP - % Solids	BAL	2648846	2011/10/14	2011/10/15	JIAN (KEN) WANG
TCLP - Extraction Fluid		2648850	N/A	2011/10/15	JIAN (KEN) WANG
TCLP - Initial and final pH	PH	2648851	N/A	2011/10/15	JIAN (KEN) WANG
TCLP Zero Headspace Extraction		2644121	2011/10/12	2011/10/12	FOZIA TABASUM
VOCs in ZHE Leachates	GC/MS	2645348	2011/10/13	2011/10/14	SERENA LENTZ

Maxxam ID LE6509 Dup **Collected** 2011/10/06
Sample ID WC-1545 **Shipped** 2011/10/07
Matrix Soil **Received** 2011/10/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2647249	2011/10/08	2011/10/14	ANCA GANEA
Ignitability of a Sample	BAL	2649714	2011/10/17	2011/10/17	GAURAV KALIA
Polychlorinated Biphenyl in Leachate	GC/ECD	2648858	2011/10/15	2011/10/17	JOY ZHANG
TCLP Zero Headspace Extraction		2644121	2011/10/12	2011/10/12	FOZIA TABASUM
VOCs in ZHE Leachates	GC/MS	2645348	2011/10/13	2011/10/14	SERENA LENTZ

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1F6892
Report Date: 2011/10/18

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Package 1	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample LE6509-01: NF/NI = Non-Flammable and Non-Ignitable

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B1F6892

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2645348	SLE	Method Blank	Leachable 4-Bromofluorobenzene	2011/10/13		99	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2011/10/13		106	%	70 - 130
			Leachable D8-Toluene	2011/10/13		97	%	70 - 130
			Leachable Benzene	2011/10/13	<0.02		mg/L	
			Leachable Carbon Tetrachloride	2011/10/13	<0.02		mg/L	
			Leachable Chlorobenzene	2011/10/13	<0.02		mg/L	
			Leachable Chloroform	2011/10/13	<0.02		mg/L	
			Leachable 1,2-Dichlorobenzene	2011/10/13	<0.05		mg/L	
			Leachable 1,4-Dichlorobenzene	2011/10/13	<0.05		mg/L	
			Leachable 1,2-Dichloroethane	2011/10/13	<0.05		mg/L	
			Leachable 1,1-Dichloroethylene	2011/10/13	<0.02		mg/L	
			Leachable Methylene Chloride(Dichlorometha	2011/10/13	<0.2		mg/L	
			Leachable Methyl Ethyl Ketone (2-Butanone)	2011/10/13	<1		mg/L	
			Leachable Tetrachloroethylene	2011/10/13	<0.02		mg/L	
			Leachable Trichloroethylene	2011/10/13	<0.02		mg/L	
			Leachable Vinyl Chloride	2011/10/13	<0.02		mg/L	
2647249	AGA	Method Blank	1,4-Difluorobenzene	2011/10/14		108	%	60 - 140
			4-Bromofluorobenzene	2011/10/14		105	%	60 - 140
			D10-Ethylbenzene	2011/10/14		99	%	60 - 140
			D4-1,2-Dichloroethane	2011/10/14		98	%	60 - 140
			Benzene	2011/10/14	<0.02		ug/g	
			Toluene	2011/10/14	<0.02		ug/g	
			Ethylbenzene	2011/10/14	<0.02		ug/g	
			o-Xylene	2011/10/14	<0.02		ug/g	
			p+m-Xylene	2011/10/14	<0.04		ug/g	
			Total Xylenes	2011/10/14	<0.04		ug/g	
			F1 (C6-C10)	2011/10/14	<10		ug/g	
			F1 (C6-C10) - BTEX	2011/10/14	<10		ug/g	
2647557	ZZ	Method Blank	o-Terphenyl	2011/10/14		97	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/10/14	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2011/10/14	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2011/10/14	<10		ug/g	
2648123	KCO	Method Blank	Acid Extractable Antimony (Sb)	2011/10/14	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2011/10/14	<1		ug/g	
			Acid Extractable Barium (Ba)	2011/10/14	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2011/10/14	<0.2		ug/g	
			Acid Extractable Boron (B)	2011/10/14	<5		ug/g	
			Acid Extractable Cadmium (Cd)	2011/10/14	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2011/10/14	<1		ug/g	
			Acid Extractable Cobalt (Co)	2011/10/14	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2011/10/14	<0.5		ug/g	
			Acid Extractable Lead (Pb)	2011/10/14	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2011/10/14	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2011/10/14	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2011/10/14	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2011/10/14	<0.2		ug/g	
			Acid Extractable Thallium (Tl)	2011/10/14	<0.05		ug/g	
			Acid Extractable Uranium (U)	2011/10/14	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2011/10/14	<5		ug/g	
			Acid Extractable Zinc (Zn)	2011/10/14	<5		ug/g	
2648858	JZ	Method Blank	Leachable 2,4,5,6-Tetrachloro-m-xylene	2011/10/17		102	%	30 - 130
			Leachable Decachlorobiphenyl	2011/10/17		121	%	30 - 130
			Leachable Total PCB	2011/10/17	<0.003		mg/L	
2645348	SLE	RPD [LE6509-05]	Leachable Benzene	2011/10/14	NC		%	30
			Leachable Carbon Tetrachloride	2011/10/14	NC		%	30

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B1F6892

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2645348	SLE	RPD [LE6509-05]	Leachable Chlorobenzene	2011/10/14	NC		%	30
			Leachable Chloroform	2011/10/14	NC		%	30
			Leachable 1,2-Dichlorobenzene	2011/10/14	NC		%	30
			Leachable 1,4-Dichlorobenzene	2011/10/14	NC		%	30
			Leachable 1,2-Dichloroethane	2011/10/14	NC		%	30
			Leachable 1,1-Dichloroethylene	2011/10/14	NC		%	30
			Leachable Methylene Chloride(Dichlorometha	2011/10/14	NC		%	30
			Leachable Methyl Ethyl Ketone (2-Butanone)	2011/10/14	NC		%	30
			Leachable Tetrachloroethylene	2011/10/14	NC		%	30
			Leachable Trichloroethylene	2011/10/14	NC		%	30
			Leachable Vinyl Chloride	2011/10/14	NC		%	30
2647249	AGA	RPD [LE6509-06]	Benzene	2011/10/14	NC		%	50
			Toluene	2011/10/14	NC		%	50
			Ethylbenzene	2011/10/14	NC		%	50
			o-Xylene	2011/10/14	NC		%	50
			p+m-Xylene	2011/10/14	NC		%	50
			Total Xylenes	2011/10/14	NC		%	50
			F1 (C6-C10)	2011/10/14	NC		%	50
			F1 (C6-C10) - BTEX	2011/10/14	NC		%	50
2648858	JZ	RPD [LE6509-01]	Leachable Total PCB	2011/10/17	NC		%	40
2645348	SLE	Matrix Spike [LE6509-05]	Leachable 4-Bromofluorobenzene	2011/10/13		100	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2011/10/13		101	%	70 - 130
			Leachable D8-Toluene	2011/10/13		102	%	70 - 130
			Leachable Benzene	2011/10/13		100	%	70 - 130
			Leachable Carbon Tetrachloride	2011/10/13		96	%	70 - 130
			Leachable Chlorobenzene	2011/10/13		100	%	70 - 130
			Leachable Chloroform	2011/10/13		104	%	70 - 130
			Leachable 1,2-Dichlorobenzene	2011/10/13		100	%	70 - 130
			Leachable 1,4-Dichlorobenzene	2011/10/13		98	%	70 - 130
			Leachable 1,2-Dichloroethane	2011/10/13		98	%	70 - 130
			Leachable 1,1-Dichloroethylene	2011/10/13		112	%	70 - 130
			Leachable Methylene Chloride(Dichlorometha	2011/10/13		102	%	70 - 130
			Leachable Methyl Ethyl Ketone (2-Butanone)	2011/10/13		114	%	60 - 140
			Leachable Tetrachloroethylene	2011/10/13		94	%	70 - 130
			Leachable Trichloroethylene	2011/10/13		99	%	70 - 130
			Leachable Vinyl Chloride	2011/10/13		111	%	70 - 130
2647249	AGA	Matrix Spike [LE6509-06]	1,4-Difluorobenzene	2011/10/14		109	%	60 - 140
			4-Bromofluorobenzene	2011/10/14		109	%	60 - 140
			D10-Ethylbenzene	2011/10/14		108	%	60 - 140
			D4-1,2-Dichloroethane	2011/10/14		105	%	60 - 140
			Benzene	2011/10/14		80	%	60 - 140
			Toluene	2011/10/14		89	%	60 - 140
			Ethylbenzene	2011/10/14		99	%	60 - 140
			o-Xylene	2011/10/14		101	%	60 - 140
			p+m-Xylene	2011/10/14		98	%	60 - 140
			F1 (C6-C10)	2011/10/14		83	%	60 - 140
2648858	JZ	Matrix Spike [LE6509-01]	Leachable 2,4,5,6-Tetrachloro-m-xylene	2011/10/17		97	%	30 - 130
			Leachable Decachlorobiphenyl	2011/10/17		123	%	30 - 130
			Leachable Total PCB	2011/10/17		102	%	30 - 130
2645348	SLE	LCS	Leachable 4-Bromofluorobenzene	2011/10/13		100	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2011/10/13		98	%	70 - 130
			Leachable D8-Toluene	2011/10/13		103	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B1F6892

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2645348	SLE	LCS	Leachable Benzene	2011/10/13		97	%	70 - 130
			Leachable Carbon Tetrachloride	2011/10/13		95	%	70 - 130
			Leachable Chlorobenzene	2011/10/13		98	%	70 - 130
			Leachable Chloroform	2011/10/13		96	%	70 - 130
			Leachable 1,2-Dichlorobenzene	2011/10/13		98	%	70 - 130
			Leachable 1,4-Dichlorobenzene	2011/10/13		98	%	70 - 130
			Leachable 1,2-Dichloroethane	2011/10/13		96	%	70 - 130
			Leachable 1,1-Dichloroethylene	2011/10/13		108	%	70 - 130
			Leachable Methylene Chloride(Dichlorometha	2011/10/13		105	%	70 - 130
			Leachable Methyl Ethyl Ketone (2-Butanone)	2011/10/13		98	%	60 - 140
			Leachable Tetrachloroethylene	2011/10/13		92	%	70 - 130
			Leachable Trichloroethylene	2011/10/13		96	%	70 - 130
			Leachable Vinyl Chloride	2011/10/13		104	%	70 - 130
2647249	AGA	LCS	1,4-Difluorobenzene	2011/10/14		110	%	60 - 140
			4-Bromofluorobenzene	2011/10/14		105	%	60 - 140
			D10-Ethylbenzene	2011/10/14		101	%	60 - 140
			D4-1,2-Dichloroethane	2011/10/14		102	%	60 - 140
			Benzene	2011/10/14		71	%	60 - 140
			Toluene	2011/10/14		84	%	60 - 140
			Ethylbenzene	2011/10/14		89	%	60 - 140
			o-Xylene	2011/10/14		92	%	60 - 140
			p+m-Xylene	2011/10/14		88	%	60 - 140
			F1 (C6-C10)	2011/10/14		89	%	60 - 140
2647557	ZZ	LCS	o-Terphenyl	2011/10/14		91	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/10/14		90	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2011/10/14		96	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2011/10/14		100	%	70 - 130
2648123	KCO	LCS	Acid Extractable Antimony (Sb)	2011/10/14		91	%	75 - 125
			Acid Extractable Arsenic (As)	2011/10/14		93	%	75 - 125
			Acid Extractable Barium (Ba)	2011/10/14		94	%	75 - 125
			Acid Extractable Beryllium (Be)	2011/10/14		91	%	75 - 125
			Acid Extractable Boron (B)	2011/10/14		87	%	75 - 125
			Acid Extractable Cadmium (Cd)	2011/10/14		93	%	75 - 125
			Acid Extractable Chromium (Cr)	2011/10/14		95	%	75 - 125
			Acid Extractable Cobalt (Co)	2011/10/14		94	%	75 - 125
			Acid Extractable Copper (Cu)	2011/10/14		95	%	75 - 125
			Acid Extractable Lead (Pb)	2011/10/14		98	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2011/10/14		95	%	75 - 125
			Acid Extractable Nickel (Ni)	2011/10/14		94	%	75 - 125
			Acid Extractable Selenium (Se)	2011/10/14		97	%	75 - 125
			Acid Extractable Silver (Ag)	2011/10/14		94	%	75 - 125
			Acid Extractable Thallium (Tl)	2011/10/14		96	%	75 - 125
			Acid Extractable Uranium (U)	2011/10/14		98	%	75 - 125
			Acid Extractable Vanadium (V)	2011/10/14		92	%	75 - 125
			Acid Extractable Zinc (Zn)	2011/10/14		98	%	75 - 125
2648858	JZ	LCS	Leachable 2,4,5,6-Tetrachloro-m-xylene	2011/10/17		99	%	30 - 130
			Leachable Decachlorobiphenyl	2011/10/17		118	%	30 - 130
			Leachable Total PCB	2011/10/17		100	%	30 - 130

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.
LCS: A blank matrix sample 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.

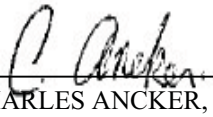
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

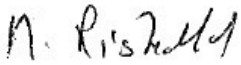
Maxxam Job #: B1F6892

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

BRAD NEWMAN, Scientific Specialist



CHARLES ANCKER, B.Sc., M.Sc., C.Chem, Senior Analyst



MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 71994

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: O'Connor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Haywood
Address: 70 wynford Dr. Toronto ON M3C 1K5	Address: 5420 Canotek Rd Unit 1 of Ottawa ON K1J 1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-haywood@oconnor-associates.com
Ph: 416-441-7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 10-8518T02

FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1 WC-1545			X		6	11/10/06	16:15			X	X	X						~~X~~ LC	X				X	~~X~~ LC	X	X	
2																		LC						LC			
3																											
4																											
5																											
6																											
7																											
8																											
9																											

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 8800626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11064640

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Reg 153 Table ___ ☐ 2004 ☐ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO ☐ ODWS
☒ Other Reg 558

SPECIAL INSTRUCTIONS
Test samples as per ITQ
Insufficient number of jars, proceed with analysis.
ICE - YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1 2 3 2/3/4°C	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

LAB USE ONLY
MAXXAM JOB #: B1F6892

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2011/10/06	17:00	1. JZMAY LZH	2011/10/07	17:44
2.			2.		
3.			3.		

SAMPLES
LABELED BY: T-L
VERIFIED BY: DKN

COC-1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2011/10/06

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B1F6892*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Libby Kuit* Data Reviewed by (Signature):

Review Date: *2011/10/19*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55280

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2297
Received: 2011/11/02, 14:55

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
F1 + F2 Calculation	3	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
F3 + F4 Calculation	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55280

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2297
Received: 2011/11/02, 14:55

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

Encryption Key

Patricia Opoku
10 Nov 2011 12:02:37 -05:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B1H2297
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		LM3118	LM3118	LM3119	LM3120		
Sampling Date		2011/10/31 14:45	2011/10/31 14:45	2011/10/31 13:35	2011/10/31 14:40		
COC Number		55280	55280	55280	55280		
	Units	**BH-9**	**BH-9 Lab-Dup**	**BH-7**	**BH-15**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	2674441
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	2674441
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	2674441
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	2674441
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	2674441
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	2674441
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	2674441
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	2674441
F2 (C10-C16 Hydrocarbons)	ug/L	<100		<100	<100	100	2672972
F3 (C16-C34 Hydrocarbons)	ug/L	<100		<100	<100	100	2672972
F4 (C34-C50 Hydrocarbons)	ug/L	<100		<100	<100	100	2672972
Reached Baseline at C50	ug/L	Yes		Yes	Yes		2672972
F1 + F2	ug/L	<100		<100	<100	100	2669607
F3 + F4	ug/L	<100		<100	<100	100	2669608
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	103		104	103		2672972
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	99	99	103	103		2674441
4-Bromofluorobenzene	%	99	98	92	97		2674441
D10-Ethylbenzene	%	114	113	121	120		2674441
D4-1,2-Dichloroethane	%	106	105	107	108		2674441

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2297
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		LM3118		LM3119	LM3120		
Sampling Date		2011/10/31 14:45		2011/10/31 13:35	2011/10/31 14:40		
COC Number		55280		55280	55280		
	Units	**BH-9**	**QC Batch**	**BH-7**	**BH-15**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	2674314	<0.5	<0.5	0.5	2674320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2297
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LM3118 **Collected** 2011/10/31
Sample ID BH-9 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2674441	N/A	2011/11/08	GALINA BAGLAY
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2672972	2011/11/07	2011/11/07	BILJANA LAZOVIC
F3 + F4 Calculation		2669608	N/A	2011/11/08	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674314	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3118 Dup **Collected** 2011/10/31
Sample ID BH-9 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2674441	N/A	2011/11/08	GALINA BAGLAY

Maxxam ID LM3119 **Collected** 2011/10/31
Sample ID BH-7 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2674441	N/A	2011/11/08	GALINA BAGLAY
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2672972	2011/11/07	2011/11/07	BILJANA LAZOVIC
F3 + F4 Calculation		2669608	N/A	2011/11/08	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674320	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3120 **Collected** 2011/10/31
Sample ID BH-15 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2674441	N/A	2011/11/08	GALINA BAGLAY
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2672972	2011/11/07	2011/11/07	BILJANA LAZOVIC
F3 + F4 Calculation		2669608	N/A	2011/11/08	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674320	N/A	2011/11/09	JOHN BOWMAN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2297
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Package 1	0.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B1H2297

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2672972	BLZ	Method Blank	o-Terphenyl	2011/11/07		103	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/07	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2011/11/07	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2011/11/07	<100		ug/L	
2674314	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674320	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674441	GBA	Method Blank	1,4-Difluorobenzene	2011/11/08		101	%	70 - 130
			4-Bromofluorobenzene	2011/11/08		99	%	70 - 130
			D10-Ethylbenzene	2011/11/08		117	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/08		105	%	70 - 130
			Benzene	2011/11/08	<0.20		ug/L	
			Toluene	2011/11/08	<0.20		ug/L	
			Ethylbenzene	2011/11/08	<0.20		ug/L	
			o-Xylene	2011/11/08	<0.20		ug/L	
			p+m-Xylene	2011/11/08	<0.40		ug/L	
			Total Xylenes	2011/11/08	<0.40		ug/L	
			F1 (C6-C10)	2011/11/08	<25		ug/L	
			F1 (C6-C10) - BTEX	2011/11/08	<25		ug/L	
		RPD [LM3118-04]	Benzene	2011/11/08	NC		%	30
			Toluene	2011/11/08	NC		%	30
			Ethylbenzene	2011/11/08	NC		%	30
			o-Xylene	2011/11/08	NC		%	30
			p+m-Xylene	2011/11/08	NC		%	30
			Total Xylenes	2011/11/08	NC		%	30
			F1 (C6-C10)	2011/11/08	NC		%	30
			F1 (C6-C10) - BTEX	2011/11/08	NC		%	30
		Matrix Spike [LM3118-04]						
			1,4-Difluorobenzene	2011/11/08		99	%	70 - 130
			4-Bromofluorobenzene	2011/11/08		100	%	70 - 130
			D10-Ethylbenzene	2011/11/08		111	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/08		104	%	70 - 130
			Benzene	2011/11/08		89	%	70 - 130
			Toluene	2011/11/08		96	%	70 - 130
			Ethylbenzene	2011/11/08		99	%	70 - 130
			o-Xylene	2011/11/08		102	%	70 - 130
			p+m-Xylene	2011/11/08		98	%	70 - 130
			F1 (C6-C10)	2011/11/08		83	%	70 - 130
2672972	BLZ	LCS	o-Terphenyl	2011/11/07		103	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/07		101	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2011/11/07		96	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2011/11/07		93	%	70 - 130
2674314	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		100	%	80 - 120
2674320	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		97	%	80 - 120
2674441	GBA	LCS	1,4-Difluorobenzene	2011/11/08		102	%	70 - 130
			4-Bromofluorobenzene	2011/11/08		100	%	70 - 130
			D10-Ethylbenzene	2011/11/08		114	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/08		104	%	70 - 130
			Benzene	2011/11/08		91	%	70 - 130
			Toluene	2011/11/08		100	%	70 - 130
			Ethylbenzene	2011/11/08		104	%	70 - 130
			o-Xylene	2011/11/08		107	%	70 - 130
			p+m-Xylene	2011/11/08		101	%	70 - 130
			F1 (C6-C10)	2011/11/08		89	%	70 - 130

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B1H2297

LCS: A blank matrix sample 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.

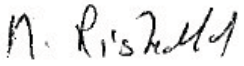
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

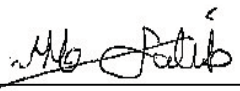
Maxxam Job #: B1H2297

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



MAMDOUH SALIB, Analyst, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 55280

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Dr. Toronto ON M3C 1K5	Address: 5420 Canotek Rd Ottawa ON K1J 1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7866	Ph: 613-742-1781
Sampler Name (Print): LAILA GHALATI	Consultant Project #: 10-8518T02

#	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH-9	X				8	11/10/31	14:45	X		X	X	X					X											
2	BH-7	X				8	11/10/31	13:35	X		X	X	X					X											
3	BH-15	X				8	11/10/31	14:40	X		X	X	X					X											
4																														
5																														
6																														
7																														
8																														
9																														

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1106464O

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
(please indicate which Reg. version and if RSC required)
[ ] PWQO 1/c/c [ ] ODWS
[ ] Other Med grained

SPECIAL INSTRUCTIONS: Test samples as per TOR
ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
(Standard) (5 days) [X]
Rush (3 days) [ ]
(2 days) [ ]
(1 day) [ ]
(same day) [ ]
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1 01 2 01 3 0°C	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

LAB USE ONLY
MAXXAM JOB # B1H2297

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA GHALATI	2011/11/01	15:00	MARK ARCHER	2011/11/01	14:55
2.					
3.					

SAMPLES
LABELED BY: DKN
VERIFIED BY: MAF

COC-1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2011/10/31

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B1H2297*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

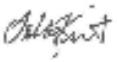
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Libby Kuit* Data Reviewed by (Signature): 

Review Date: *2011/11/11*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55282

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2319
Received: 2011/11/02, 14:55

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
F1 + F2 Calculation	3	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
F3 + F4 Calculation	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55282

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2319
Received: 2011/11/02, 14:55

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

Encryption Key

Patricia Opoku
10 Nov 2011 12:19:53 -05:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B1H2319
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		LM3225	LM3226	LM3226	LM3227		
Sampling Date		2011/10/31 12:35	2011/10/31 12:35	2011/10/31 12:35	2011/10/31 10:50		
COC Number		55282	55282	55282	55282		
	Units	**BH-8**	**DUP-2**	**DUP-2 Lab-Dup**	**BH-10**	**RDL**	**QC Batch**
Benzene	ug/L	16	17		10	0.20	2675214
Toluene	ug/L	4.5	4.8		0.27	0.20	2675214
Ethylbenzene	ug/L	140	150		2.8	0.20	2675214
o-Xylene	ug/L	6.4	7.3		0.67	0.20	2675214
p+m-Xylene	ug/L	1.7	2.0		<0.40	0.40	2675214
Total Xylenes	ug/L	8.1	9.2		0.67	0.40	2675214
F1 (C6-C10)	ug/L	660	780		<25	25	2675214
F1 (C6-C10) - BTEX	ug/L	490	600		<25	25	2675214
F2 (C10-C16 Hydrocarbons)	ug/L	230	240	240	<100	100	2674433
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	<100	<100	100	2674433
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	<100	<100	100	2674433
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes		2674433
F1 + F2	ug/L	720	840		<100	100	2669607
F3 + F4	ug/L	<100	<100	<100	<100	100	2669608
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	108	111	110	105		2674433
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	99	99		100		2675214
4-Bromofluorobenzene	%	111	110		108		2675214
D10-Ethylbenzene	%	123	122		124		2675214
D4-1,2-Dichloroethane	%	91	92		91		2675214

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2319
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		LM3225	LM3226		LM3227		
Sampling Date		2011/10/31 12:35	2011/10/31 12:35		2011/10/31 10:50		
COC Number		55282	55282		55282		
	Units	**BH-8**	**DUP-2**	**QC Batch**	**BH-10**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	<0.5	2674320	<0.5	0.5	2674314

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2319
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LM3225 **Collected** 2011/10/31
Sample ID BH-8 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2675214	N/A	2011/11/09	SUNG HO KIM
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674320	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3226 **Collected** 2011/10/31
Sample ID DUP-2 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2675214	N/A	2011/11/09	SUNG HO KIM
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674320	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3226 Dup **Collected** 2011/10/31
Sample ID DUP-2 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/10	AUTOMATED STATCHK

Maxxam ID LM3227 **Collected** 2011/10/31
Sample ID BH-10 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2675214	N/A	2011/11/09	SUNG HO KIM
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674314	N/A	2011/11/09	JOHN BOWMAN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2319
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Package 1	1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B1H2319

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2674314	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674320	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674433	DPO	Method Blank	o-Terphenyl	2011/11/08		110	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2011/11/08	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2011/11/08	<100		ug/L	
2675214	SHK	Method Blank	1,4-Difluorobenzene	2011/11/09		99	%	70 - 130
			4-Bromofluorobenzene	2011/11/09		107	%	70 - 130
			D10-Ethylbenzene	2011/11/09		107	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/09		90	%	70 - 130
			Benzene	2011/11/09	<0.20		ug/L	
			Toluene	2011/11/09	<0.20		ug/L	
			Ethylbenzene	2011/11/09	<0.20		ug/L	
			o-Xylene	2011/11/09	<0.20		ug/L	
			p+m-Xylene	2011/11/09	<0.40		ug/L	
			Total Xylenes	2011/11/09	<0.40		ug/L	
			F1 (C6-C10)	2011/11/09	<25		ug/L	
			F1 (C6-C10) - BTEX	2011/11/09	<25		ug/L	
2674433	DPO	RPD [LM3226-02]	F2 (C10-C16 Hydrocarbons)	2011/11/08	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2011/11/08	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2011/11/08	NC		%	30
2674314	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		100	%	80 - 120
2674320	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		97	%	80 - 120
2674433	DPO	LCS	o-Terphenyl	2011/11/08		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08		113	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2011/11/08		111	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2011/11/08		99	%	70 - 130
2675214	SHK	LCS	1,4-Difluorobenzene	2011/11/08		100	%	70 - 130
			4-Bromofluorobenzene	2011/11/08		109	%	70 - 130
			D10-Ethylbenzene	2011/11/08		110	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/08		97	%	70 - 130
			Benzene	2011/11/08		94	%	70 - 130
			Toluene	2011/11/08		97	%	70 - 130
			Ethylbenzene	2011/11/08		97	%	70 - 130
			o-Xylene	2011/11/08		99	%	70 - 130
			p+m-Xylene	2011/11/08		96	%	70 - 130
			F1 (C6-C10)	2011/11/08		115	%	70 - 130

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

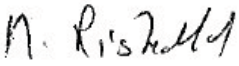
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

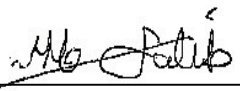
Maxxam Job #: B1H2319

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



MAMDOUH SALIB, Analyst, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam 6740 Campobello Road Mississauga, ON L5N 2L8 www.maxxamanalytics.com Phone: (905) 817-5700 Fax: (905) 817-5779 Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

Page 1 of 1

C of C # 55282

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Dr. Toronto ON M3C 1K5	Address: 5420 Canotek Rd Ottawa ON K1J 1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416.441.7866	Ph: 613-742-1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH-8	X			LC	8	11/10/31	12:35	X		X	X	X					X										
2	DUP-2	X				8	11/10/31	12:35	X		X	X	X					X										
3	BH-10	X				8	11/10/31	10:50	X		X	X	X					X										
4																												
5																												
6																												
7																												
8																												
9																												

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11064640

REGULATORY CRITERIA / DETECTION LIMITS: ☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC (please indicate which Reg. version and if RSC required) 1/C/C ☐ PWQO ☐ ODWS ☐ Other med grained

SPECIAL INSTRUCTIONS: Test samples as per TDG

ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME: Standard (5 days) ☒ Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐

Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1/1/1°C	PRESENT	✓		TEMP	PRESENT			TEMP	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LC LAILA CHALATI	2011/11/01	15:00	1. Ashitha Sukumar ASHITHA Sukumar	2011/11/02	14:55
2.			2.		
3.			3.		

LAB USE ONLY

MAXXAM JOB # B1H2319

SAMPLES: LABELED BY DKN VERIFIED BY FW

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2011/10/31

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B1H2319*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

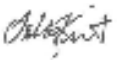
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Libby Kuit* Data Reviewed by (Signature): 

Review Date: *2011/11/11*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55281

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2322
Received: 2011/11/02, 14:55

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
F1 + F2 Calculation	3	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
F3 + F4 Calculation	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55281

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2322
Received: 2011/11/02, 14:55

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

Encryption Key

Patricia Opoku
10 Nov 2011 12:31:20 -05:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B1H2322
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		LM3243	LM3244	LM3245		
Sampling Date		2011/10/31 11:55	2011/10/31 11:45	2011/10/31 10:45		
COC Number		55281	55281	55281		
	Units	**BH-13**	**BH-14**	**BH-11**	**RDL**	**QC Batch**
Benzene	ug/L	4.1	3.7	7.9	0.20	2675214
Toluene	ug/L	52	0.31	10	0.20	2675214
Ethylbenzene	ug/L	340	75	27	0.20	2675214
o-Xylene	ug/L	110	0.25	50	0.20	2675214
p+m-Xylene	ug/L	620	<0.40	130	0.40	2675214
Total Xylenes	ug/L	730	<0.40	180	0.40	2675214
F1 (C6-C10)	ug/L	2100	190	830	25	2675214
F1 (C6-C10) - BTEX	ug/L	930	110	610	25	2675214
F2 (C10-C16 Hydrocarbons)	ug/L	270	<100	240	100	2674433
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	<100	100	2674433
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	<100	100	2674433
Reached Baseline at C50	ug/L	Yes	Yes	Yes		2674433
F1 + F2	ug/L	1200	110	850	100	2669607
F3 + F4	ug/L	<100	<100	<100	100	2669608
Extraction Surrogate Recovery (%)						
o-Terphenyl	%	105	104	107		2674433
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	98	98	100		2675214
4-Bromofluorobenzene	%	112	109	111		2675214
D10-Ethylbenzene	%	121	122	125		2675214
D4-1,2-Dichloroethane	%	92	92	91		2675214

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2322
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		LM3243	LM3244		LM3245		
Sampling Date		2011/10/31 11:55	2011/10/31 11:45		2011/10/31 10:45		
COC Number		55281	55281		55281		
	Units	**BH-13**	**BH-14**	**QC Batch**	**BH-11**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	<0.5	2674314	<0.5	0.5	2674320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2322
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LM3243
Sample ID BH-13
Matrix Water

Collected 2011/10/31
Shipped 2011/11/01
Received 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2675214	N/A	2011/11/08	SUNG HO KIM
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674314	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3244
Sample ID BH-14
Matrix Water

Collected 2011/10/31
Shipped 2011/11/01
Received 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2675214	N/A	2011/11/09	SUNG HO KIM
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674314	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3245
Sample ID BH-11
Matrix Water

Collected 2011/10/31
Shipped 2011/11/01
Received 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2675214	N/A	2011/11/08	SUNG HO KIM
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674320	N/A	2011/11/09	JOHN BOWMAN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2322
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Package 1	0.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B1H2322

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2674314	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674320	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674433	DPO	Method Blank	o-Terphenyl	2011/11/08		110	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2011/11/08	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2011/11/08	<100		ug/L	
2675214	SHK	Method Blank	1,4-Difluorobenzene	2011/11/09		99	%	70 - 130
			4-Bromofluorobenzene	2011/11/09		107	%	70 - 130
			D10-Ethylbenzene	2011/11/09		107	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/09		90	%	70 - 130
			Benzene	2011/11/09	<0.20		ug/L	
			Toluene	2011/11/09	<0.20		ug/L	
			Ethylbenzene	2011/11/09	<0.20		ug/L	
			o-Xylene	2011/11/09	<0.20		ug/L	
			p+m-Xylene	2011/11/09	<0.40		ug/L	
			Total Xylenes	2011/11/09	<0.40		ug/L	
			F1 (C6-C10)	2011/11/09	<25		ug/L	
			F1 (C6-C10) - BTEX	2011/11/09	<25		ug/L	
2674433	DPO	Matrix Spike [LM3245-02]	o-Terphenyl	2011/11/08		114	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08		NC (1)	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2011/11/08		103	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2011/11/08		96	%	50 - 130
2674314	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		100	%	80 - 120
2674320	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		97	%	80 - 120
2674433	DPO	LCS	o-Terphenyl	2011/11/08		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08		113	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2011/11/08		111	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2011/11/08		99	%	70 - 130
2675214	SHK	LCS	1,4-Difluorobenzene	2011/11/08		100	%	70 - 130
			4-Bromofluorobenzene	2011/11/08		109	%	70 - 130
			D10-Ethylbenzene	2011/11/08		110	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/08		97	%	70 - 130
			Benzene	2011/11/08		94	%	70 - 130
			Toluene	2011/11/08		97	%	70 - 130
			Ethylbenzene	2011/11/08		97	%	70 - 130
			o-Xylene	2011/11/08		99	%	70 - 130
			p+m-Xylene	2011/11/08		96	%	70 - 130
			F1 (C6-C10)	2011/11/08		115	%	70 - 130

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
LCS: A blank matrix sample 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 (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
(1) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration.

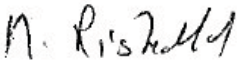
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

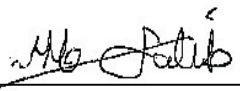
Maxxam Job #: B1H2322

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

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department



MAMDOUH SALIB, Analyst, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam 6740 Campobello Road Mississauga, ON L5N 2L8 www.maxxamanalytics.com Phone: (905) 817-5700 Fax: (905) 817-5779 Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

Page 1 of 1

C of C # 55281

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 WYNFORD Dr. Toronto ON M3C 1K5	Address: 5420 Canotek Rd Ottawa ON K1J 1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416.441.7866	Ph: 613.742.1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH-13	X				8	11/10/31	11:55	X		X	X	X					X										
2	BH-14	X				8	11/10/31	11:45	X		X	X	X					X										
3	BH-11	X				8	11/10/31	10:45	X		X	X	X					X										
4																												
5																												
6																												
7																												
8																												
9																												

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11064640

REGULATORY CRITERIA / DETECTION LIMITS: ☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC (please indicate which Reg. version and if RSC required) ☐ PWQO 1/c/c ☐ ODWS ☐ Other med grained

SPECIAL INSTRUCTIONS: Test samples as per TDG

ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME: Standard (5 days) ☒ Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐

Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1 0/2 0/3 0°C	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. [signature] LAILA CHALATI	2011/11/01	15:00	1. Ashitha Sukumar Ashitha Sukumar	2011/11/02	14:55
2.			2.		
3.			3.		

LAB USE ONLY

MAXXAM JOB #: B1H2322

SAMPLES: LABELED BY DKN VERIFIED BY FW

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2011/10/31

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B1H2322*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

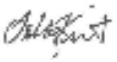
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Libby Kuit* Data Reviewed by (Signature): 

Review Date: *2011/11/11*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55284

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2326
Received: 2011/11/02, 14:55

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
F1 + F2 Calculation	2	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
F3 + F4 Calculation	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55284

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2326
Received: 2011/11/02, 14:55

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

Encryption Key

Patricia Opoku
10 Nov 2011 12:36:27 -05:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B1H2326
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		LM3261	LM3262		
Sampling Date		2011/11/01 14:15	2011/11/01 14:00		
COC Number		55284	55284		
	Units	**TRIP BLANK-2**	**FIELD BLANK-2**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	2674681
Toluene	ug/L	<0.20	<0.20	0.20	2674681
Ethylbenzene	ug/L	<0.20	<0.20	0.20	2674681
o-Xylene	ug/L	<0.20	<0.20	0.20	2674681
p+m-Xylene	ug/L	<0.40	<0.40	0.40	2674681
Total Xylenes	ug/L	<0.40	<0.40	0.40	2674681
F1 (C6-C10)	ug/L	<25	<25	25	2674681
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	2674681
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	2674442
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	2674442
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	2674442
Reached Baseline at C50	ug/L	Yes	Yes		2674442
F1 + F2	ug/L	<100	<100	100	2669607
F3 + F4	ug/L	<100	<100	100	2669608
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	95	94		2674442
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	99	99		2674681
4-Bromofluorobenzene	%	102	101		2674681
D10-Ethylbenzene	%	118	113		2674681
D4-1,2-Dichloroethane	%	104	103		2674681

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2326
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		LM3261		LM3262		
Sampling Date		2011/11/01 14:15		2011/11/01 14:00		
COC Number		55284		55284		
	Units	**TRIP BLANK-2**	**QC Batch**	**FIELD BLANK-2**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	2674314	<0.5	0.5	2674320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2326
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LM3261 **Collected** 2011/11/01
Sample ID TRIP BLANK-2 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2674681	N/A	2011/11/08	LINCOLN RAMDAHIN
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674442	2011/11/08	2011/11/08	RAVINDER GAIDHU
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674314	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3262 **Collected** 2011/11/01
Sample ID FIELD BLANK-2 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2674681	N/A	2011/11/08	LINCOLN RAMDAHIN
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674442	2011/11/08	2011/11/08	RAVINDER GAIDHU
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674320	N/A	2011/11/09	JOHN BOWMAN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2326
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B1H2326

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2674314	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674320	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674442	RGA	Method Blank	o-Terphenyl	2011/11/08		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2011/11/08	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2011/11/08	<100		ug/L	
2674681	LRA	Method Blank	1,4-Difluorobenzene	2011/11/08		99	%	70 - 130
			4-Bromofluorobenzene	2011/11/08		100	%	70 - 130
			D10-Ethylbenzene	2011/11/08		110	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/08		101	%	70 - 130
			Benzene	2011/11/08	<0.20		ug/L	
			Toluene	2011/11/08	<0.20		ug/L	
			Ethylbenzene	2011/11/08	<0.20		ug/L	
			o-Xylene	2011/11/08	<0.20		ug/L	
			p+m-Xylene	2011/11/08	<0.40		ug/L	
			Total Xylenes	2011/11/08	<0.40		ug/L	
			F1 (C6-C10)	2011/11/08	<25		ug/L	
			F1 (C6-C10) - BTEX	2011/11/08	<25		ug/L	
2674314	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		100	%	80 - 120
2674320	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		97	%	80 - 120
2674442	RGA	LCS	o-Terphenyl	2011/11/08		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08		87	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2011/11/08		107	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2011/11/08		105	%	70 - 130
2674681	LRA	LCS	1,4-Difluorobenzene	2011/11/08		99	%	70 - 130
			4-Bromofluorobenzene	2011/11/08		100	%	70 - 130
			D10-Ethylbenzene	2011/11/08		106	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/08		101	%	70 - 130
			Benzene	2011/11/08		95	%	70 - 130
			Toluene	2011/11/08		92	%	70 - 130
			Ethylbenzene	2011/11/08		100	%	70 - 130
			o-Xylene	2011/11/08		99	%	70 - 130
			p+m-Xylene	2011/11/08		99	%	70 - 130
			F1 (C6-C10)	2011/11/08		87	%	70 - 130

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B1H2326

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 55284

ANALYSIS REQUESTED

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Dr. Toronto ON M3C 1K5	Address: 5420 Canotek Rd Ottawa ON K1J 1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7866	Ph: 613-742-1721
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: ~~GROUND WATER~~	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	Trip Blank -2	X				5	11/11/01	14:15			X	X	X					X											
2	Field Blank -2	X				8	11/11/01	14:30	X		X	X	X					X											
3																													
4																													
5																													
6																													
7																													
8																													
9																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 38001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11064640

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
(please indicate which Reg. version and if RSC required)
[ ] PWQO 1/c/c [ ] ODWS
[ ] Other med grained

SPECIAL INSTRUCTIONS: Test samples as per TDG
ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) [X]
Rush (3 days) [ ]
(2 days) [ ]
(1 day) [ ]
(same day) [ ]
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
1	PRESENT	✓			PRESENT				PRESENT		
TEMP 1 0/2/3 2°C	INTACT	✓		TEMP 1 2 3	INTACT			TEMP 1 2 3	INTACT		

LAB USE ONLY
MAXXAM JOB # B1H2326

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2011/11/01	15:00	1. MARIE FERRER	2011/11/02	14:55
2.			2.		
3.			3.		

SAMPLES
LABELED BY: ASR
VERIFIED BY: DKN

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2011/11/01

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B1H2326*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

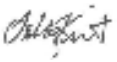
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Libby Kuit* Data Reviewed by (Signature): 

Review Date: *2011/11/11*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55283

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2329
Received: 2011/11/02, 14:55

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
F1 + F2 Calculation	2	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
F3 + F4 Calculation	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O'Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02
Your C.O.C. #: 55283

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2011/11/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1H2329
Received: 2011/11/02, 14:55

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

Encryption Key

Patricia Opoku
10 Nov 2011 12:43:49 -05:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B1H2329
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		LM3296		LM3297	LM3297		
Sampling Date		2011/10/31 13:45		2011/11/01 11:00	2011/11/01 11:00		
COC Number		55283		55283	55283		
	Units	**BH-6**	**RDL**	**BH-5**	**BH-5 Lab-Dup**	**RDL**	**QC Batch**
Benzene	ug/L	440	1.0	48	41	2.0	2672520
Toluene	ug/L	74	1.0	<2.0	<2.0	2.0	2672520
Ethylbenzene	ug/L	2500	1.0	1400	1300	2.0	2672520
o-Xylene	ug/L	650	1.0	140	130	2.0	2672520
p+m-Xylene	ug/L	4600	2.0	2900	2600	4.0	2672520
Total Xylenes	ug/L	5200	2.0	3100	2700	4.0	2672520
F1 (C6-C10)	ug/L	16000	130	9500	8600	250	2672520
F1 (C6-C10) - BTEX	ug/L	7800	130	5000	4500	250	2672520
F2 (C10-C16 Hydrocarbons)	ug/L	2300	100	2700		100	2674433
F3 (C16-C34 Hydrocarbons)	ug/L	<100	100	<100		100	2674433
F4 (C34-C50 Hydrocarbons)	ug/L	<100	100	<100		100	2674433
Reached Baseline at C50	ug/L	Yes		Yes			2674433
F1 + F2	ug/L	10000	100	7700		300	2669607
F3 + F4	ug/L	<100	100	<100		100	2669608
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	105		105			2674433
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	98		98	98		2672520
4-Bromofluorobenzene	%	99		99	100		2672520
D10-Ethylbenzene	%	105		119	110		2672520
D4-1,2-Dichloroethane	%	98		101	99		2672520

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Job #: B1H2329
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		LM3296		
Sampling Date		2011/10/31 13:45		
COC Number		55283		
	Units	**BH-6**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.5	0.5	2674320

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2329
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Test Summary

Maxxam ID LM3296 **Collected** 2011/10/31
Sample ID BH-6 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2672520	N/A	2011/11/07	SIMON XI
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK
Dissolved Metals by ICPMS	ICP/MS	2674320	N/A	2011/11/09	JOHN BOWMAN

Maxxam ID LM3297 **Collected** 2011/11/01
Sample ID BH-5 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2672520	N/A	2011/11/05	SIMON XI
F1 + F2 Calculation		2669607	N/A	2011/11/09	AUTOMATED STATCHK
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2674433	2011/11/08	2011/11/08	DORINA POPA
F3 + F4 Calculation		2669608	N/A	2011/11/09	AUTOMATED STATCHK

Maxxam ID LM3297 Dup **Collected** 2011/11/01
Sample ID BH-5 **Shipped** 2011/11/01
Matrix Water **Received** 2011/11/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2672520	N/A	2011/11/05	SIMON XI

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B1H2329
Report Date: 2011/11/10

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Package 1	1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample LM3297-01: F1-BTEX Analysis:
Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report

Maxxam Job Number: B1H2329

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2672520	JXI	Method Blank	1,4-Difluorobenzene	2011/11/05		99	%	70 - 130
			4-Bromofluorobenzene	2011/11/05		99	%	70 - 130
			D10-Ethylbenzene	2011/11/05		109	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/05		103	%	70 - 130
			Benzene	2011/11/05	<0.20		ug/L	
			Toluene	2011/11/05	<0.20		ug/L	
			Ethylbenzene	2011/11/05	<0.20		ug/L	
			o-Xylene	2011/11/05	<0.20		ug/L	
			p+m-Xylene	2011/11/05	<0.40		ug/L	
			Total Xylenes	2011/11/05	<0.40		ug/L	
			F1 (C6-C10)	2011/11/05	<25		ug/L	
			F1 (C6-C10) - BTEX	2011/11/05	<25		ug/L	
2674320	JBW	Method Blank	Dissolved Lead (Pb)	2011/11/09	<0.5		ug/L	
2674433	DPO	Method Blank	o-Terphenyl	2011/11/08		110	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2011/11/08	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2011/11/08	<100		ug/L	
2672520	JXI	RPD [LM3297-02]	Benzene	2011/11/05	14.6		%	30
			Toluene	2011/11/05	NC		%	30
			Ethylbenzene	2011/11/05	10.9		%	30
			o-Xylene	2011/11/05	9.2		%	30
			p+m-Xylene	2011/11/05	10.9		%	30
			Total Xylenes	2011/11/05	10.9		%	30
			F1 (C6-C10)	2011/11/05	10.6		%	30
			F1 (C6-C10) - BTEX	2011/11/05	10.3		%	30
		Matrix Spike [LM3297-02]						
			1,4-Difluorobenzene	2011/11/06		97	%	70 - 130
			4-Bromofluorobenzene	2011/11/06		104	%	70 - 130
			D10-Ethylbenzene	2011/11/06		107	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/06		100	%	70 - 130
			Benzene	2011/11/06		NC (1)	%	70 - 130
			Toluene	2011/11/06		98	%	70 - 130
			Ethylbenzene	2011/11/06		NC (1)	%	70 - 130
			o-Xylene	2011/11/06		NC (1)	%	70 - 130
			p+m-Xylene	2011/11/06		NC (1)	%	70 - 130
			F1 (C6-C10)	2011/11/06		NC (1)	%	70 - 130
		LCS	1,4-Difluorobenzene	2011/11/05		101	%	70 - 130
			4-Bromofluorobenzene	2011/11/05		101	%	70 - 130
			D10-Ethylbenzene	2011/11/05		109	%	70 - 130
			D4-1,2-Dichloroethane	2011/11/05		105	%	70 - 130
			Benzene	2011/11/05		91	%	70 - 130
			Toluene	2011/11/05		96	%	70 - 130
			Ethylbenzene	2011/11/05		105	%	70 - 130
			o-Xylene	2011/11/05		102	%	70 - 130
			p+m-Xylene	2011/11/05		109	%	70 - 130
			F1 (C6-C10)	2011/11/05		102	%	70 - 130
2674320	JBW	LCS	Dissolved Lead (Pb)	2011/11/09		97	%	80 - 120
2674433	DPO	LCS	o-Terphenyl	2011/11/08		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2011/11/08		113	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2011/11/08		111	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2011/11/08		99	%	70 - 130

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.
LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11064640
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 10-8518T02

Quality Assurance Report (Continued)

Maxxam Job Number: B1H2329

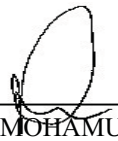
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration .

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

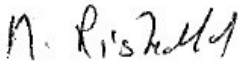
Maxxam Job #: B1H2329

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



ABDI MOHAMUD, Senior Analyst

BRAD NEWMAN, Scientific Specialist



MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 55283

ANALYSIS REQUESTED

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Dr Toronto ON M3C 1K5	Address: 5420 Canotek Rd Ottawa ON K1J 1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7366	Ph: 613-742-1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	Limited sample recovery proceed with analysis as is no F4 bottle
1	BH-6	X				8	11/10/31	13:45	X		X	X	X					X											
2	~~FIELD BLANK-2~~	X				2C																							
3	BH-5	X				6	11/11/01	11:00			X	X	X															X	
4																													
5																													
6																													
7																													
8																													
9																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 8800626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1106464O

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
(please indicate which Reg. version and if RSC required)
[ ] PWQO 1/C/C [ ] ODWS
[ ] Other med grained

SPECIAL INSTRUCTIONS: Test samples as per TOR
ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard [X] (5 days)
Rush [ ] (3 days) [ ] (2 days) [ ] (1 day) [ ] (same day)
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 10/21/3.2°C	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2011/11/01	15:00	1. MARC FERRER	2011/11/02	14:55
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB # B142329
SAMPLES
LABELED BY: ASR
VERIFIED BY: DKN

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2011/10/31 and 2011/11/01

Location: *1545 Woodroffe Avenue, Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B1H2329*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

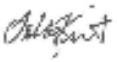
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Libby Kuit* Data Reviewed by (Signature): 

Review Date: *2011/11/11*

Revision Date (if applicable): Revised by (Signature):

APPENDIX D

QUALITY ASSURANCE AND QUALITY CONTROL

There were no lab or field QA/QC issues identified in this report that need to be discussed in detail.

The soil field QA/QC program consisted of one field duplicate sample for the analysis of BTEX, PHC fractions F1 to F4, hexane, and lead and one field blank for analysis of BTEX, PHC fraction F1 and hexane.

The groundwater field QA/QC program consisted of one field duplicate sample, one field blank samples, and one trip blank sample for the analysis of BTEX, PHC fractions F1 to F4, and lead.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

The designated field duplicate RPD alert limits are presented in Tables D-1 and D-3. Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit. As indicated, all of the RPDs were within acceptable limits.

The soil field blank was compared to the alert limits and is presented in Table D-2. As indicated, all of the results were within the acceptable limits.

The water trip blank and field blank were compared to the alert limits and are presented in Table D-4. As indicated, all of the results were within the alert limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for soil and/or groundwater samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. As indicated, no laboratory QA/QC issues were identified.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE D-1

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-13-3.1-3.7	RDL	DUP-11 FIELD DUPLICATE BH-13-3.1-3.7	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Sample ID	LE6232		LE6233			
Sample Depth (mbgs)	3.1-3.7		3.1-3.7			
Date Sampled (yyyy/mm/dd)	2011/10/06		2011/10/06			
PARAMETERS						
Benzene	<0.02	0.02	<0.02	0.02	NC	100
Toluene	0.04	0.02	0.04	0.02	NC	100
Ethylbenzene	6.1	0.02	6.7	0.02	9%	100
Total Xylenes	7.5	0.04	8.2	0.04	9%	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	280	10	340	10	19%	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	33	10	30	10	NC	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F4 (>C34 - C50)	<10	10	<10	10	NC	100
Hexane	5.0	0.5	6.4	0.5	25%	100
Lead	9	5	<5	5	NC	100

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
BOLD - Exceeds RPD alert limit

O'CONNOR ASSOCIATES

TABLE D-2

SOIL FIELD BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND HEXANE

SAMPLE LOCATIONS	RDL	FIELD BLANK	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		LE6239	
Date Sampled (yyyy/mm/dd)		2011/10/06	
PARAMETERS			
Benzene	0.02	<0.02	No
Toluene	0.02	<0.02	No
Ethylbenzene	0.02	<0.02	No
Total Xylenes	0.04	<0.04	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	10	<10	No
Hexane	0.5	<0.5	No

a - BTEX have been subtracted from the fraction.
RDL - Reportable detection limit
"-" - Not analyzed
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
BOLD - Exceeds alert limit
Note - Alert limits for field blanks are 5x RDL for BTEX and Hexane; 2x RDL for petroleum hydrocarbons fractions F1 to F4.

O'CONNOR ASSOCIATES

TABLE D-3

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH-8	RDL	DUP-2 FIELD DUPLICATE BH-8	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Sample ID	LM3225		LM3226			
Date Sampled (yyyy/mm/dd)	2011/10/31		2011/10/31			
PARAMETERS						
Benzene	16	0.20	17	0.20	6%	80
Toluene	4.5	0.20	4.8	0.20	6%	80
Ethylbenzene	140	0.20	150	0.20	7%	80
Total Xylenes	8.1	0.40	9.2	0.40	13%	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	490	25	600	25	20%	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	230	100	240	100	NC	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	100	<100	100	NC	80
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	100	<100	100	NC	80
Lead	<0.5	0.5	<0.5	0.5	NC	50

a - Alert limits for field duplicate samples
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
Results for all parameters are reported in micrograms per litre (µg/L)
BOLD - Exceeds RPD alert limit

O'CONNOR ASSOCIATES

TABLE D-4

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS Maxxam Sample ID Date Sampled (yyyy/mm/dd)	RDL	FIELD BLANK-2 LM3262 2011/11/01	EXCEEDS ALERT LIMIT (yes/no)	TRIP BLANK-2 LM3261 2011/11/01	EXCEEDS ALERT LIMIT (yes/no)
PARAMETERS					
Benzene	0.20	<0.20	No	<0.20	No
Toluene	0.20	<0.20	No	<0.20	No
Ethylbenzene	0.20	<0.20	No	<0.20	No
Total Xylenes	0.40	<0.40	No	<0.40	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	25	<25	No	<25	No
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	No	<100	No
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	100	<100	No	<100	No
Petroleum Hydrocarbons F4 (>C34 - C50)	100	<100	No	<100	No
Lead	0.5	<0.5	No	<0.5	No

a - BTEX have been subtracted from the fraction.
b - Naphthalene has not been subtracted from the fraction.
c - PAHs have not been subtracted from the fraction.
RDL - Reportable detection limit
"-" - Not analyzed
Results for all parameters are reported in micrograms per litre (µg/L)
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX and lead; 2x RDL for petroleum hydrocarbons fractions F1 to F4.

SUPPLEMENTARY PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE
OTTAWA, ONTARIO
Location No.: 88001626

Prepared for:

Imperial Oil
1 Duncan Mill Road
North York, Ontario M3B 1Z2

Prepared by:

Parsons Canada Ltd.
3715 Laird Road, Suite 100
Mississauga, Ontario L5L 0A3
Phone: (905) 820-1210

Ref. No.: 10-8518.3

These documents and the information contained therein are confidential, property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch.II"1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch.I"1", as such legislation may be amended from time to time.

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

Distribution:
1 copy – Imperial Oil Environmental Services
6 copies – PH Robinson Consulting (w/CD)

April 9, 2015

SUMMARY

SITE	**1545 Woodroffe, Ottawa, Ontario**
Type of Facility	Esso retail fuel outlet
Municipal Zoning	Main Parcel: GM15H(9.5) – General Mixed – Use Zone, subzone 15, height restriction of 9.5m
Adjacent Land Use	Residential
Aquifer Usage in 250 m radius	None
Reference Standards	MOECC (2011) Table 3 (non-potable) site condition standards (medium and fine textured soils, industrial/commercial/community property use)
Type of Organic Vapour Meter Used	RKI EAGLE
Date(s) of Soil Sampling	December 9 to 13, 2014
Date(s) of Groundwater Monitoring	December 15, 2014
Date(s) of Groundwater Sampling	December 15, 2014
Number of Test Pits Advanced	0
Number of Boreholes Drilled	11
Number of Wells Installed in Boreholes	7

Summary of Boreholes Drilled:

Description	BH-301	BH-302	BH-303	BH-304	BH-305	BH-306
Well Installed	Yes	Yes	Yes	No	Yes	Yes
Depth (mbgs)	6.5	6.5	13.9	14.0	12.5	6.7
Dominant Soil Type	Silt overlying sand	Silt and sand layers	Silt clay and sand layers	Gravel overlying clay and sand	Silt overlying clay	Gravel overlying sand and clay
Depth to Groundwater (mbgs)	4.95	4.91	3.58	Not Applicable	4.09	5.32
Screened Interval (mbgs)	3.4-6.4	3.4-6.4	3.4-6.4	Not Applicable	3.4-6.4	3.4-6.4
Free Product Thickness (mm)	Not Detected	Not Detected	Not Detected	Not Applicable	Not Detected	Not Detected
Exceeded Soil Standards	No	No	No	No	No	No
Exceeded Groundwater Standards	No	No	No	Not Applicable	No	Yes
Vertical Soil Impact Delineation Achieved	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Description	BH-307	BH-308	BH-309	BH-310	BH-311
Well Installed	No	Yes	Yes	No	No
Depth (mbgs)	7.3	6.7	5.9	6.7	6.7
Dominant Soil Type	Gravel, silt, sand and clay layers	Silt overlying clay	Gravel overlying clay and sand	Sand overlying silt and clay	Silt overlying clay and sand
Depth to Groundwater (mbgs)	Not Applicable	4.08	4.96	Not Applicable	Not Applicable
Screened Interval (mbgs)	Not Applicable	3.0-6.1	3.0-6.1	Not Applicable	Not Applicable
Free Product Thickness (mm)	Not Applicable	Not Detected	Not Detected	Not Applicable	Not Applicable
Exceeded Soil Standards	No	No	No	No	No
Exceeded Groundwater Standards	Not Applicable	No	No	Not Applicable	Not Applicable
Vertical Soil Impact Delineation Achieved	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Notes:
mbgs – metres below ground surface
mm – millimetres
MOECC – Ontario Ministry of the Environment and Climate Change

TABLE OF CONTENTS

Page

SUMMARY i

LIST OF DRAWINGS v

LIST OF TABLES v

LIST OF APPENDICES v

1.0 INTRODUCTION 1
- 1.1 Background 1
- 1.2 Scope of Work 2

2.0 FIELD ACTIVITIES 2
- 2.1 Borehole Daylighting and Drilling 3
- 2.2 Monitoring Well Installation 3
- 2.3 Soil Sampling 3
- 2.4 Groundwater Monitoring 4
- 2.5 Groundwater Sampling 5
- 2.6 Surveying 6
- 2.7 Quality Assurance and Quality Control 6
- 2.8 Laboratory Analyses 6

3.0 FINDINGS 7
- 3.1 Field Observations 7
  - 3.1.1 Stratigraphy 7
  - 3.1.2 Vapour Concentrations 7
  - 3.1.3 Groundwater 7
- 3.2 Selected Site Condition Standards 8
  - 3.2.1 Site Sensitivity 8
  - 3.2.2 Groundwater Condition 8
  - 3.2.3 Shallow Soil Property 8
  - 3.2.4 Nearby Water Body 8
  - 3.2.5 Soil Texture 8
  - 3.2.6 Property Use 9
  - 3.2.7 Full Depth or Stratified Site Condition Standards 9
  - 3.2.8 Selected Site Condition Standards 9

3.3 Soil Analytical Results..... 9
3.4 Groundwater Analytical Results 9
3.5 Quality Assurance and Quality Control Results 10

4.0 SUMMARY AND CONCLUSIONS 10

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE..... 11

LIST OF DRAWINGS

Drawing No. 1	**Site Location Map**
Drawing No. 2	**Site Plan with Proposed Structures**
Drawing No. 3	**Borehole and Monitoring Well Location Plan**
Drawing No. 4	**Elevation of the Groundwater Potentiometric Surface – 2014/12/15**
Drawing No. 5	**Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane, and Lead**
Drawing No. 6	**Groundwater Analytical Results – Petroleum Hydrocarbon Parameters, Hexane, and Lead**

LIST OF TABLES

Table 1	**Groundwater Monitoring Results**
Table 2	**Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane, and Lead**
Table 3	**Soil Analytical Results – Selected Volatile Organic Compounds**
Table 4	**Soil Analytical Results –Polycyclic Aromatic Hydrocarbons**
Table 5	**Soil Analytical Results – Selected Metals**
Table 6	**Soil Analytical Results – Polychlorinated Biphenyls**
Table 7	**Groundwater Analytical Results – Petroleum Hydrocarbon Parameters, Hexane, and Lead**
Table 8	**Groundwater Analytical Results – Selected Volatile Organic Compounds**
Table 9	**Groundwater Analytical Results – Selected Metals**

LIST OF APPENDICES

Appendix A	**Borehole Logs**
Appendix B	**MOECC Well Record**
Appendix C	**Laboratory Certificates of Analysis – Soil and Groundwater**
Appendix D	**Quality Assurance and Quality Control**

1.0 INTRODUCTION

Parsons Canada Ltd. (Parsons) was retained by Imperial Oil to conduct a Supplementary Phase Two Environmental Site Assessment (ESA) at an operating Esso retail fuel outlet located at 1545 Woodroffe Avenue, in Ottawa, Ontario (the Site).

The purpose of this assessment was to assess for potential contaminants of concern in the soil and groundwater on-site. The fieldwork was conducted in December 2014.

1.1 BACKGROUND

The Site location is shown on Drawing No. 1 and a Site plan showing the former, current and proposed Site configurations is presented on Drawing No. 2. The borehole and monitoring well locations are presented on Drawing No. 3.

Imperial Oil operated the Site as a service station since the 1960s. Prior to the 1960s, the Site was undeveloped. The Site has had at least three configurations. From the 1960s to 1984, a service station building/repair garage, a canopy and two pump islands were present on the southwest corner of the site. In 1984, the Site was reconfigured and was comprised of six gasoline and diesel underground storage tanks (USTs), one furnace oil UST, a convenience store, a carwash, a canopy and three pump islands. Between approximately 1984 and 1993, a repair garage was present on the northeast portion of the Site. In 1993, the repair garage was converted to a Tim Hortons restaurant. In 2009, the USTs were removed and replaced with a new tank nest that consisted of three 50 000 L gasoline USTs and one 22 700 L diesel UST.

In 2008, a subsurface investigation was completed prior to undertaking the planned UST upgrade. In 2009, at the time of the Site upgrade, the UST excavation was expanded to remove petroleum hydrocarbon (PHC) impacted soil. Following the excavation, a supplementary Phase Two ESA was completed to assess potential PHC impacts in the soil and groundwater in 2010. Parsons completed a contaminant management plan proposing groundwater monitoring and sampling quarterly in 2010, semi-annually in 2011 and annually in 2012. In 2011, another supplementary Phase Two ESA was completed in order to further delineate potential contaminants of concern in soil and groundwater on-site. In 2012, an additional supplementary Phase Two ESA was completed by Parsons. Based on this assessment and previous assessments, Parsons proposed a contaminant management plan of annual groundwater monitoring and sampling.

According to the City of Ottawa, the main parcel of the Site is zoned as general mixed use (GM15H (9.5)). A small triangular wedge (approximately 65 m by 15 m) located on the north side of the Site is defined as a residential third density zone and is not included as part of this assessment.

1.2 SCOPE OF WORK

The scope of work was to perform the following activities:

- Advance 11 boreholes (BH-301 to BH-311) and install a monitoring well in seven of the boreholes, specifically, BH-301 to BH-303, BH-305, BH-306, BH-308 and BH309.

- Collect soil samples from each borehole for laboratory analysis of some or all of the following parameters: benzene, toluene, ethylbenzene, xylenes (BTEX); petroleum hydrocarbon (PHC) fractions F1 to F4; hexane; lead; and selected volatile organic compounds (VOCs) (specifically, ethylene dibromide, dichlorodifluoromethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, methyl t-butyl ether, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane, and vinyl chloride); selected or full suites of polycyclic aromatic hydrocarbons (PAHs) (specifically, acenaphthene, acenaphthylene, anthracene, fluoranthene, fluorene, 1-methylnaphthalene, 2-methylnaphthalene, total methylnaphthalenes, naphthalene, and phenanthrene); selected metals (specifically arsenic, barium, chromium, copper, and zinc); and polychlorinated biphenyls (PCB).

- Monitor all of the new wells for subsurface vapour concentrations, water levels and the presence or absence of light non-aqueous phase liquid hydrocarbons (free product).

- Collect groundwater samples from all of the new monitoring wells for laboratory analysis of some or all of the following parameters: BTEX; PHC fractions F1 to F4; hexane; lead; selected VOCs, as noted above, and selected metals, as noted above.

- Prepare a report that describes the field activities and the results of the Site assessment.

2.0 FIELD ACTIVITIES

Prior to proceeding with the Supplementary Phase Two, various utility representatives and a private utility locating contractor identified underground utility locations.

All field procedures were conducted in accordance with the Ontario Ministry of the Environment and Climate Change (MOECC) *Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04* (as amended), the MOECC *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended), and standard industry practice.

2.1 BOREHOLE DAYLIGHTING AND DRILLING

Veolia Environmental Services Industrial Services Inc., a MOECC approved waste receiver, was retained by Parsons to advance all of the boreholes by daylighting on December 9, 2014 to depths ranging from 1.8 m below ground surface (mbgs) to 2.7 mbgs using a water lance vacuum excavator. The slurry was subsequently transported off-site for disposal to the Veolia Environmental Industrial Services Inc. in Ottawa, Ontario.

George Downing Estate Drilling Ltd. was retained by Parsons to further advance boreholes BH-301 to BH-311 using either a CME 75 truck-mounted drill rig or a geoprobe drill rig that was equipped with hollow stem augers, between the dates of December 9 to 13, 2014.

The borehole locations are shown on Drawing No. 3. The boreholes were advanced to a maximum depth of 14.0 mbgs.

2.2 MONITORING WELL INSTALLATION

A monitoring well, consisting of a 51 mm diameter polyvinyl chloride (PVC) 10 slot screen, measuring approximately 3.0 m in length, and an un-slotted riser, was installed in seven of the advanced boreholes (BH-301 to BH-303, BH-305, BH-306, BH-308 and BH-309). The annular space between the PVC well and the borehole wall was backfilled to approximately 0.3 m above the top of the screen with #2 silica sand, then with hydrated bentonite pellets to approximately 0.23 mbgs, and filled with #2 silica sand to approximately 0.15 mbgs. The monitoring well was then finished with a flush-mount casing set in concrete grout to protect the well from damage.

Following installation of the monitoring wells, the wells were developed by purging the water until it was observed to be reasonably free of turbidity or until the wells became dry. Purge water was subsequently transported off-site by Tomlinson Environmental Services Ltd., a MOECC approved of waste receiver, in Ottawa Ontario.

Monitoring well installation details are presented on the borehole logs in Appendix A and in Table 1. The MOECC well record is presented in Appendix B.

2.3 SOIL SAMPLING

Soil sampling was conducted at regular depth intervals in the boreholes using a stainless steel spoon sampling device and a split-spoon sampler or continuous sampler. The samples were collected from each device using a clean stainless steel trowel and nitrile gloves and placed in laboratory supplied jars. The sampling devices were washed prior to collection of each soil sample. Specifically, any excess soil was brushed off prior to scrubbing the sampling device with soapy water, rinsing with distilled water, and allowing it to air dry. Each soil sample was

immediately split and one portion of the sample was sealed in a clean plastic bag for screening, which included determining textural description, visual physical evidence of impact (e.g., staining or free product), and measurement of the sample combustible headspace vapour concentration (soil vapour concentration). The remainder of the sample was promptly placed in containers supplied by the laboratory and stored in coolers with ice for possible analysis.

The soil samples submitted for analysis of BTEX, PHC fraction F1 and hexane; and selected VOCs, were each collected in two septum topped 40 mL vials pre-charged with 10 mL of methanol. Approximately 5 g of soil was collected using a clean disposable syringe and nitrile gloves and placed in each methanol filled sampling vial. Samples for the remaining parameters were collected in either 60 mL or 120 mL glass jars with Teflon lined lids.

The soil vapour concentrations were measured using a combustible gas detector (RKI EAGLE) having a minimum detection level of 5 parts per million by volume (ppmv). The gas detector was operated in the methane elimination mode.

The calibration of the gas detector was checked daily in the field. The procedure involved checking the instrument response against a nominal 43% lower explosive limit (% LEL) concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument reading was within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if the reading was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field until the instrument reading was within ±10% of the gas standard.

Soil sampling details are presented on the borehole logs in Appendix A.

Two samples from each borehole were selected for laboratory analyses, based on sample location relative to the apparent water table, visual observations and/or field screening results. In general, one worst case soil sample, based on field screening results, and one deeper sample from the first apparent non-impacted zone, were submitted for laboratory analysis. The samples were stored in coolers with ice.

2.4 GROUNDWATER MONITORING

On December 15, 2014, all of the newly installed monitoring wells were monitored for subsurface vapour concentrations, water levels, and the presence or absence of free product.

The wells were generally monitored in order of least impacted to most impacted (based on soil field screening and soil analytical results).

Immediately after removing the well cap, the maximum subsurface vapour concentrations in the wells were measured using the combustible gas detector that was operated in methane

elimination mode. This was done by inserting the collection tube of the gas detector into the un-slotted riser pipes and recording the peak instrument readings.

The depth to the water table and presence or absence of free product in the wells were determined with a Heron H.OIL electronic interface probe that was cleaned with soapy water, then rinsed with distilled water, between monitoring wells.

If a measurable thickness of free product is observed in any well, a groundwater sample is not collected from that well. However, a groundwater sample is collected from a well if a petroleum sheen is observed.

2.5 GROUNDWATER SAMPLING

Groundwater samples were collected from all accessible monitoring wells on December 15, 2014.

The wells were generally sampled in order of least impacted to most impacted (based on soil screening results).

The wells were sampled using a low-flow purging methodology to reduce sample turbidity. Low-flow purging was completed using a variable-flow peristaltic pump to remove groundwater from the mid-point of the monitoring well screened zone.

The pump was connected to a flow-through cell equipped with a multimeter (Horiba U-22) that measured pH, temperature, electrical conductivity, dissolved oxygen (DO), reduction oxidation potential (REDOX), and turbidity. During low-flow purging the water level in each well was continually monitored, and the purging rate was adjusted such that the overall drawdown from the static groundwater level did not exceed approximately 10 cm. The purging rates ranged from approximately 100 mL/minute to 120 mL/minute.

The groundwater sample was collected when the pH, temperature, electrical conductivity, DO, REDOX, and turbidity measurements generally stabilized as noted below, over three consecutive readings, taken at a minimum rate of at least one per every flow-through cell volume.

Temperature -	± 3%
pH -	± 0.1 pH Units
Electrical Conductivity -	± 3%
DO -	± 10%
REDOX -	± 10 mV
Turbidity -	± 10%

The pump and flow-through cell were connected to the wells with polyethylene and silicone tubing that were individually dedicated to each monitoring well. All groundwater samples were collected using the dedicated tubing.

Samples for analysis of BTEX, PHC fraction F1, hexane, and VOCs were collected in septum topped 40 mL clear glass vials (with zero headspace), pre-charged with sodium bisulphate preservative. Samples for analysis of PHC fractions F2 to F4 were collected in 500 mL amber glass bottles pre-charged with sodium bisulphate. Samples for analysis of PHC fraction F4 gravimetric were collected in 1 L amber glass bottles pre-charged with hydrochloric acid preservative. Samples for analysis of metals were field filtered using 0.45 µm groundwater filters and collected in 250 mL HDPE plastic bottles pre-charged with nitric acid preservative. All sample bottles were supplied by the laboratory. The groundwater samples were placed in coolers with ice immediately after they were collected.

2.6 SURVEYING

On December 16, 2014 all of the newly installed monitoring wells were surveyed vertically relative to a local benchmark . The assigned elevation of the benchmark was 100.00 m. The benchmark location is shown on Drawing No. 4 and described in Table 1.

2.7 QUALITY ASSURANCE AND QUALITY CONTROL

A quality assurance and quality control (QA/QC) program was implemented to reduce and quantify potential issues introduced during sample collection, handling, shipping and analysis. The program included, but was not limited to using dedicated sampling equipment, using sample specific identification and labelling procedures, and using chain of custody records.

Field soil QA/QC samples consisted of three field duplicate samples for analysis of some or all of the following: BTEX, PHC fractions F1 to F4, hexane, lead, selected or full suites of PAHs, and metals. Additional field soil QA/QC samples consisted of one trip blank methanol sample for analysis of BTEX, PHC fraction F1, and VOCs, and one field blank silica sand-sample for PAHs and PCBs.

Field groundwater QA/QC samples consisted of one field duplicate, one field blank, and one trip blank for analysis of BTEX, PHC fractions F1 to F4, hexane, lead, selected VOCs, and selected metals.

2.8 LABORATORY ANALYSES

The soil and groundwater samples collected from the boreholes were submitted for laboratory analyses of some or all of the following parameters: BTEX; PHC fractions F1 to F4; hexane; lead;

selected VOCs; selected and full suites of PAHs; selected metals; and PCBs. A total of 22 soil samples and seven groundwater samples, excluding QA/QC samples, were submitted for analysis.

The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam's Mississauga laboratory is accredited by the Standards Council of Canada. Analytical methods used by the laboratory are referenced in the certificates of analysis presented in Appendix C. Analytical procedures were conducted in accordance with the MOECC *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended).

3.0 FINDINGS

3.1 FIELD OBSERVATIONS

3.1.1 STRATIGRAPHY

The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of gravel and/or silt to depths of approximately 3.0 mbgs; and silt, sand and/or clay layers to the maximum depth of assessment of 14.0 mbgs. Detailed stratigraphic descriptions are presented on the borehole logs in Appendix A.

3.1.2 VAPOUR CONCENTRATIONS

Soil vapour concentrations measured in the samples recovered from the boreholes are presented on the logs in Appendix A. The soil vapour concentrations ranged from not detected (<5 ppmv) to 5% LEL.

Subsurface vapour concentrations measured in the monitoring wells on December 15, 2014 are presented in Table 1. As indicated, the subsurface vapour concentrations ranged from not detected to 220 ppmv.

3.1.3 GROUNDWATER

On December 15, 2014, the depth to groundwater ranged from 3.58 mbgs to 5.32 mbgs. The groundwater potentiometric surface elevations are presented on Drawing No. 4. As indicated, the inferred principal direction of groundwater flow was to the southwest.

The groundwater depths, calculated potentiometric elevations, and the measured product thicknesses are presented in Table 1. As indicated, measurable free product or a petroleum sheen (i.e. <1 mm) was not detected in any monitoring well.

3.2 SELECTED SITE CONDITION STANDARDS

For this Site, the approach to use the amended (2011) Ontario Regulation 153/04 generic site condition standards was selected. The rationale for selection of the applicable MOECC 2011 standards is described below.

3.2.1 SITE SENSITIVITY

The Site would not be considered environmentally sensitive, based on the following:

- No part of the Site is on or within 30 m of an area of natural significance;
- pH values for surface soil samples from previous assessments were not less than 5 or greater than 9; and,
- pH values for subsurface soil samples from previous assessments were not less than 5 or greater than 11.

3.2.2 GROUNDWATER CONDITION

The groundwater condition is non-potable based on the following:

- The Site and all properties within 250 m of the Site boundaries are supplied by a municipal water supply system.
- The Site is not in a municipally designated groundwater protection area.

3.2.3 SHALLOW SOIL PROPERTY

The Site would not be considered a shallow soil property, based on the following:

The available borehole logs and geologic records indicate that less than one-third of the area of the Site consists of soil less than 2 m in depth beneath the soil surface, excluding any non-soil surface treatment greater than 0.5 m thick.

3.2.4 NEARBY WATER BODY

A water body, in whole or in part, is not on the Site or within 30 m of the Site boundaries.

3.2.5 SOIL TEXTURE

The applicable soil texture for the Site is based on the following:

- Medium to fine textured soils, as determined by the borehole logs, geological maps and the historical grain size analyses, which collectively indicated that more than two-thirds of the soil at the property, measured by volume, consisted of 50 percent or more of particles that are smaller than 75 µm in diameter.

3.2.6 PROPERTY USE

The applicable property use is as follows:

- Industrial/commercial/community property use, as the Site is currently used for commercial purposes and the current zoning of the Site is general mixed use.

3.2.7 FULL DEPTH OR STRATIFIED SITE CONDITION STANDARDS

The full depth rather than the stratified generic site condition standards were selected.

3.2.8 SELECTED SITE CONDITION STANDARDS

Based on the above discussion, the following site condition standards were selected for application at the Site:

- Full depth generic site condition standards in a non-potable groundwater condition (MOECC 2011 Table 3) for industrial/commercial/community property use and medium and fine textured soils.

3.3 SOIL ANALYTICAL RESULTS

The soil analytical results for BTEX, PHC fractions F1 to F4, hexane, lead, selected VOCs, selected and full suites of PAHs, selected metals and PCBs are presented and compared to the applicable MOECC Table 3 standards in Tables 2 to 6. The BTEX, PHC fractions F1 to F4, hexane and lead results are also shown on Drawings No. 5. All of the results satisfied the applicable standards.

3.4 GROUNDWATER ANALYTICAL RESULTS

The groundwater analytical results for BTEX, PHC fractions F1 to F4, hexane, lead, selected VOCs, and selected metals are presented and compared to the applicable MOECC Table 3 standards in Tables 7 to 9. The BTEX, PHC fractions F1 to F4, hexane and lead results are also shown on Drawings No. 6. All of the results satisfied the applicable standards with the following exceptions:

- PHC parameters north of the convenience store.

3.5 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

The results of the laboratory QA/QC analyses are presented in the laboratory certificates of analysis in Appendix D. The analyses included instrument and extraction surrogate recoveries, method blanks, matrix duplicates, matrix spikes, and laboratory control samples. No laboratory QA/QC issues were identified that call into question the reliability of the laboratory data reported.

The results of the field QA/QC sample analyses are presented in the tables in Appendix D and included trip blank, field blank, and field duplicate samples. No field QA/QC issues were identified that call into question the reliability of the laboratory data reported.

The laboratory and field QA/QC discussions are presented in Appendix D. No QA/QC issues were identified that would materially affect the overall conclusions for the results presented in this report.

4.0 SUMMARY AND CONCLUSIONS

During this Supplementary Phase Two ESA, 11 boreholes were advanced and a monitoring well was installed in seven of the boreholes. Soil and groundwater samples were submitted for laboratory analysis of some or all of the following parameters: BTEX, PHC fractions F1 to F4, hexane, lead, selected VOCs, selected and full suites of PAHs, selected metals and PCBs.

The results of the assessment are summarized as follows:

1. The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of gravel and/or silt to depths of approximately 3.0 mbgs; and silt, sand and/or clay layers to the maximum depth of assessment of 14.0 mbgs. On December 15, 2014, the depth to groundwater ranged from 3.58 mbgs to 5.32 mbgs. The inferred principal direction of groundwater flow was to the southwest.

2. Free product or a petroleum sheen was not detected during monitoring or sampling of the wells.

3. The MOECC (2011) Table 3 (non-potable) site condition standards for medium and fine textured soils and industrial/commercial/community property use were selected for comparison with the soil and groundwater analytical results.

4. All soil sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, hexane, lead, selected VOCs, selected and full suites of PAHs, selected metals and PCBs.

5. All groundwater sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, hexane, lead, selected VOCs, and selected metals with the exception of PHC parameters north of the convenience store.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by Parsons Canada Ltd. (Parsons) for Imperial Oil. It is intended for the sole and exclusive use of Imperial Oil, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and Parsons make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by Parsons with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written

permission of Parsons. Nothing in this report is intended to constitute or provide a legal opinion.

We trust the foregoing information is satisfactory for your requirements.

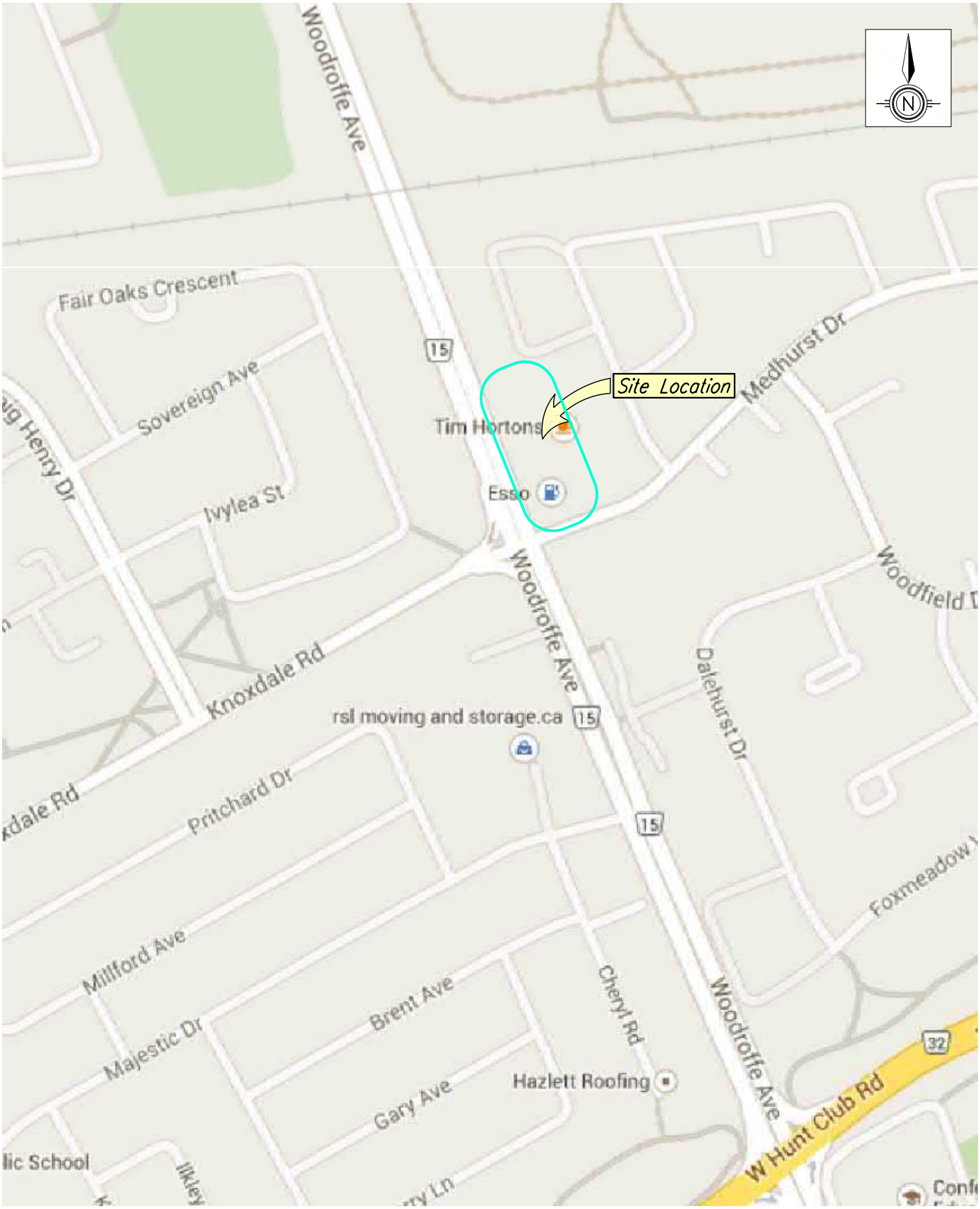
PARSONS CANADA LTD

Holly Losignore, B.Sc.

John Halstead, M.Sc., P.Geo.

DMB:bn

W:\8000-999\8518#00\8518.3\851800315.R02(PII)f.docx



REFERENCE: Google Maps, 2014

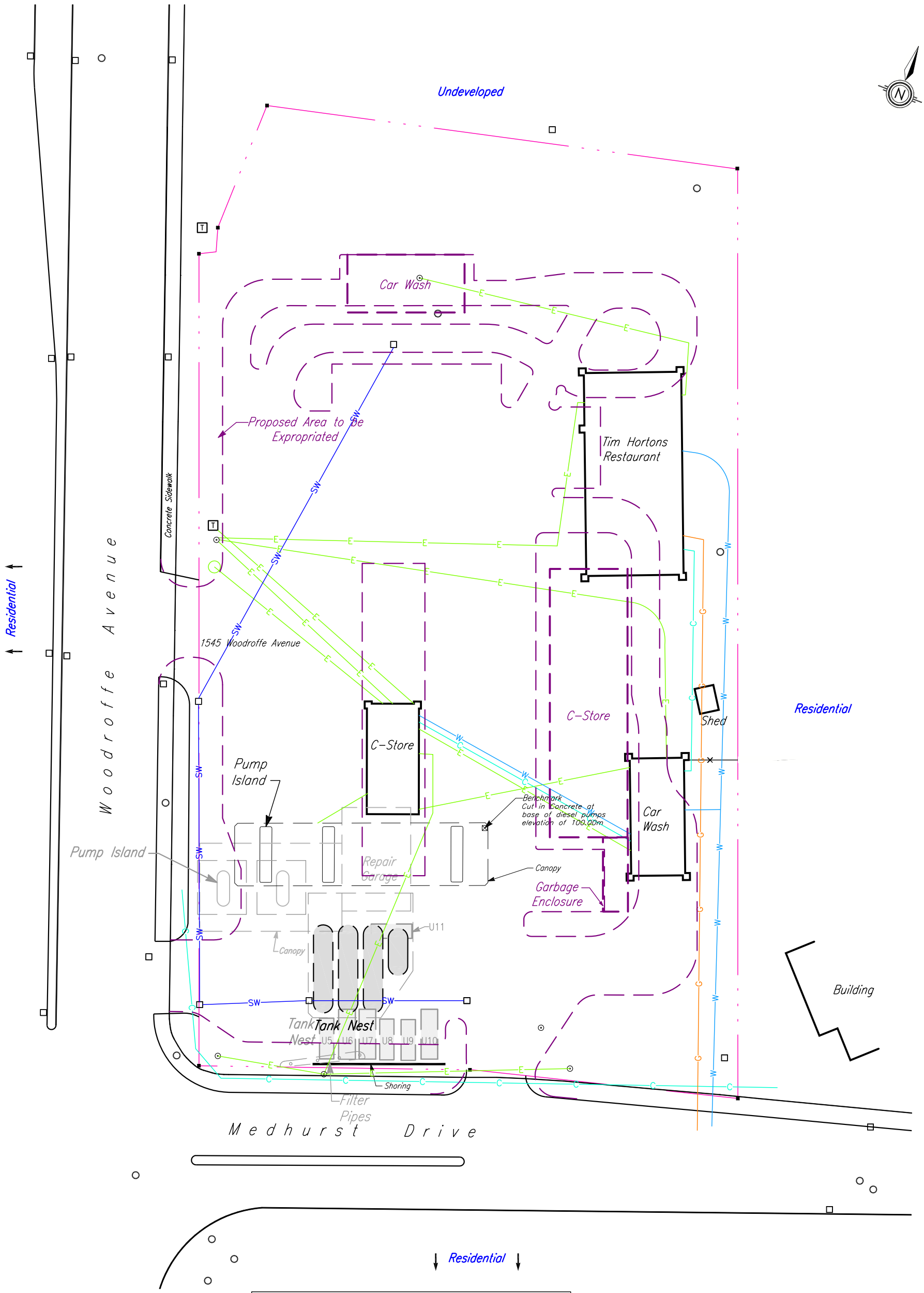
0 50 100 150 200 250m

Scale 1:5000

Site Location Map

Imperial Oil
1545 Woodroffe Ave, Ottawa, Ontario

Drawn: BAI	Page Size: 8.5 x 11 in	Ref. No.: 10-8518.3
Reviewed: HNL	File No.: 8518T151	Date: 2015/01/28
PARSONS		Drawing No.: 1



Tank Chart				
Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U5	UST	13 600 L	Gasoline	Removed
U6	UST	22 700 L	Gasoline	Removed
U7	UST	22 700 L	Gasoline	Removed
U8	UST	13 600 L	Diesel	Removed
U9	UST	13 600 L	Gasoline	Removed
U10	UST	22 700 L	Gasoline	Removed
U11	UST	2 273 L	Furnace Oil	Removed

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Transformer (Pad Mounted)
- 2010/12/31 Date Format: yyyy/mm/dd
- Proposed Structures
- Former

Utilities

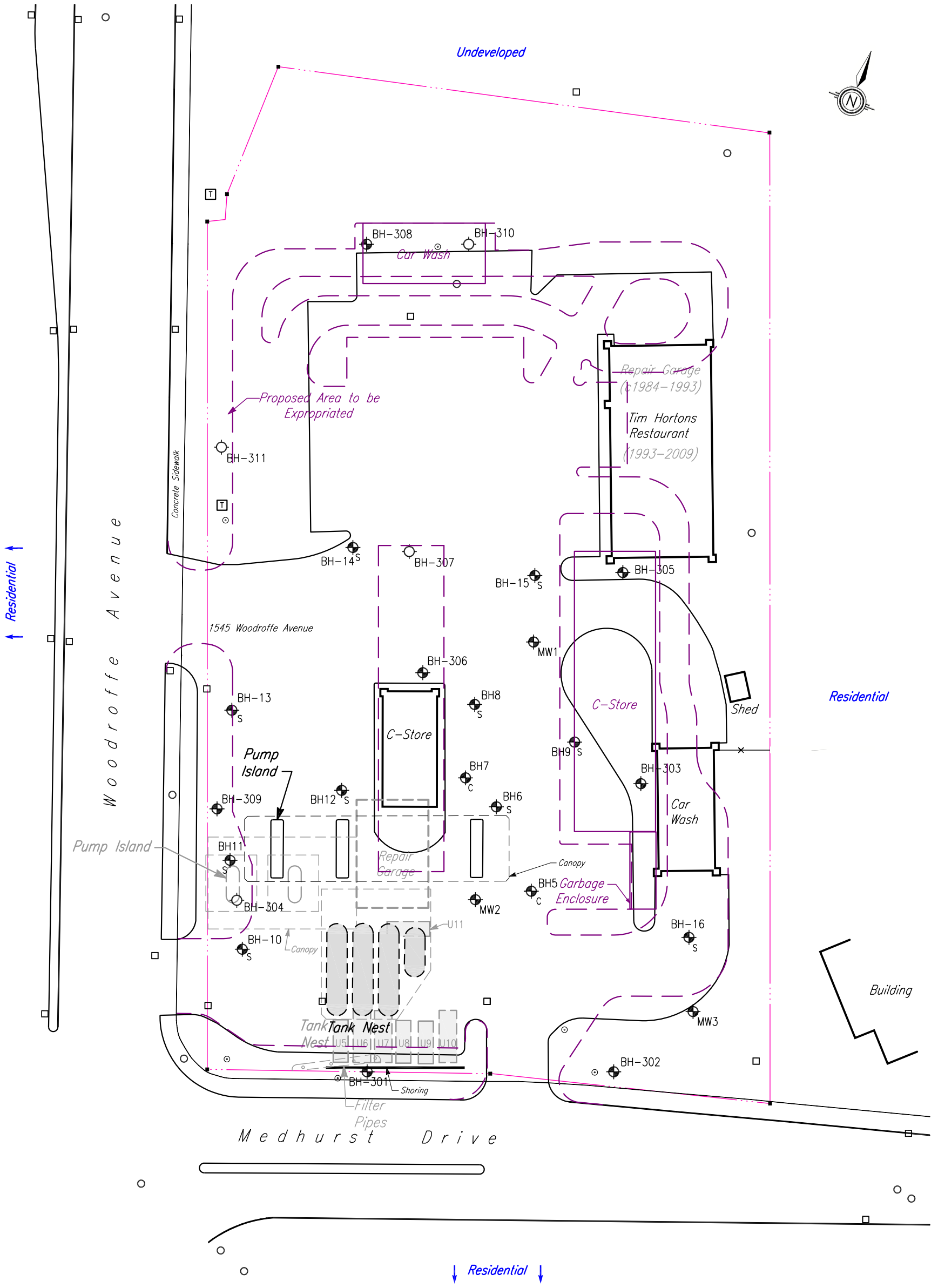
- Catch Basin
- Manhole
- Utility Pole
- Communication
- Natural Gas
- Electricity
- Storm Sewer
- Water

Site Plan with Proposed Structures

1545 Woodroffe Avenue
Ottawa, Ontario

Drawn: BAI	Page Size: 11 x 17 in	Ref. No.: 10-8518.3
Reviewed: HNL	File No.: 8518S150	Date: 2015/01/29
PARSONS		Drawing No.: 2

Ref.: S-34-P



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Transformer (Pad Mounted)
- Monitoring Well
  - BH5 to BH7 by O'Connor, 2008
  - BH8, BH9, BH11 and BH12 by O'Connor, 2010
  - BH-10 and BH-13 to BH-15 by O'Connor, 2011
  - BH-16, MW1 to MW3 by Unknown
    - (S) Screened in Sand
    - (C) Screened in Silty Clay
  - BH-301 to BH-303, BH-305, BH-306, BH-308 and BH-309 by Parsons 2014
- Borehole
  - BH-304, BH-307, BH-310 and BH-311 by Parsons, 2014
- 2010/12/31 Date Format: yyyy/mm/dd

Utilities

- Catch Basin
- Manhole
- Utility Pole

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Scale 1:500

Tank Chart

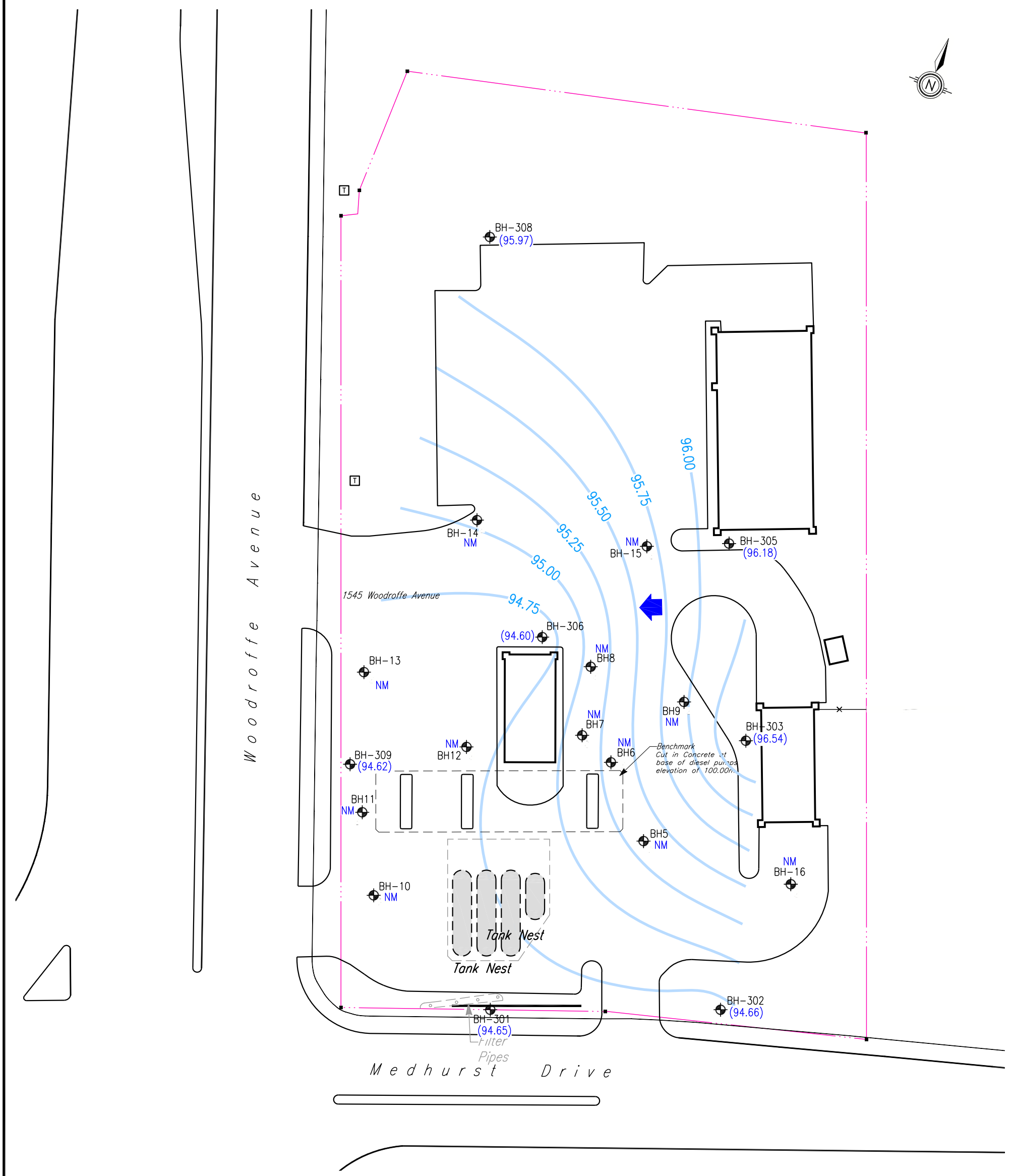
Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U5	UST	13 600 L	Gasoline	Removed
U6	UST	22 700 L	Gasoline	Removed
U7	UST	22 700 L	Gasoline	Removed
U8	UST	13 600 L	Diesel	Removed
U9	UST	13 600 L	Gasoline	Removed
U10	UST	22 700 L	Gasoline	Removed
U11	UST	2 273 L	Furnace Oil	Removed

Borehole and Monitoring Well Location Plan

1545 Woodroffe Avenue
Ottawa, Ontario

Drawn: BAI	Page Size: 11 x 17 in	Ref. No.: 10-8518.3
Reviewed: HNL	File No.: 8518S152	Date: 2015/01/29
PARSONS		Drawing No.: 3

Ref.: S-34-P



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Transformer (Pad Mounted)
- Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- Inferred Direction of Groundwater Flow
- 49.00 — Potentiometric Surface Contour with Elevation, metres
- (49.00) — Potentiometric Surface Elevation, metres
- (49.00)* — Value Not Used for Contouring
- NM — Well Not Monitored

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

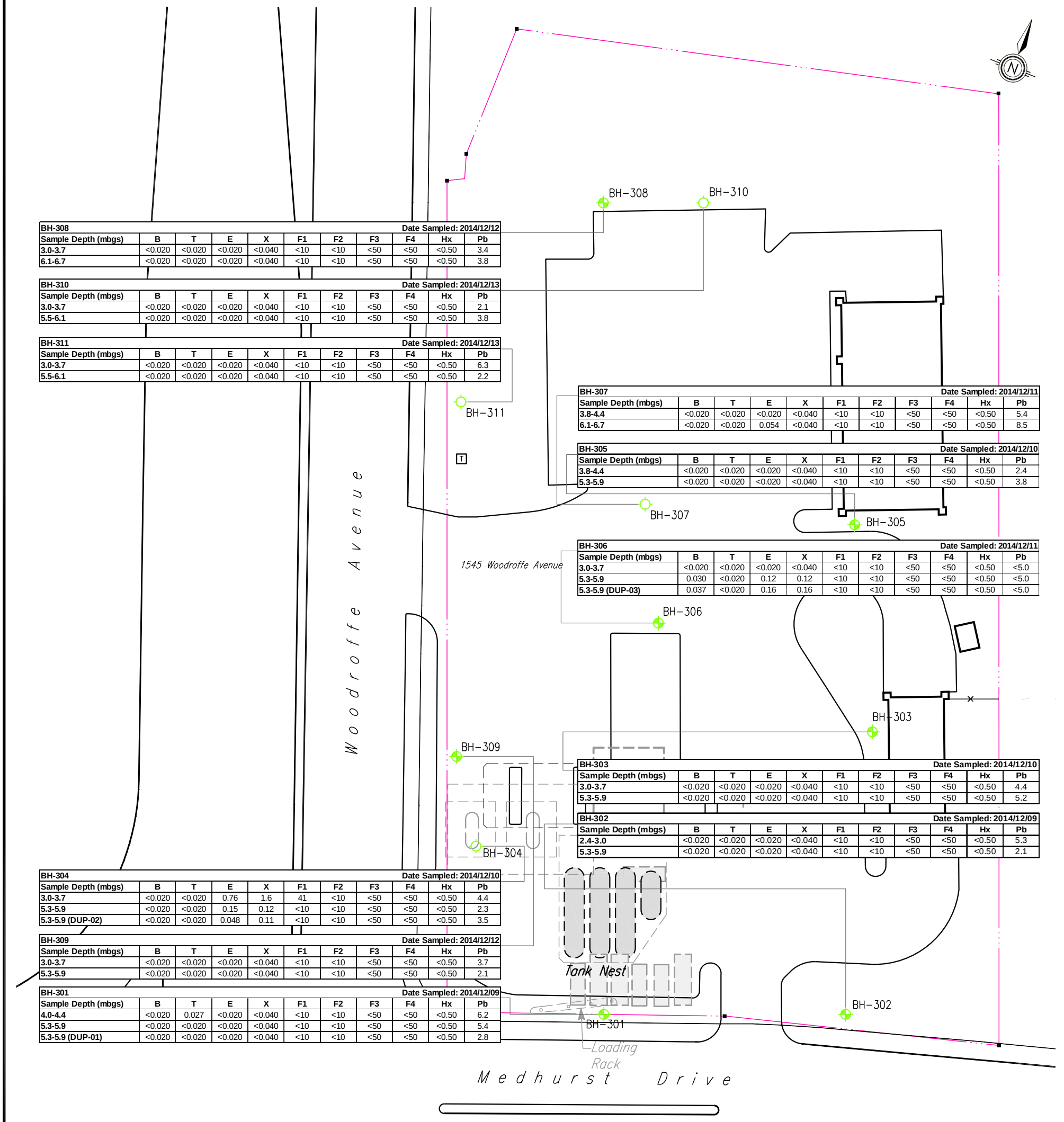
Original Scale 1:500

Elevation of the Groundwater Potentiometric Surface
2014/12/15

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: BAI	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518M153	Date: 2015/01/29
PARSONS		Drawing No.: 4

Ref.: S-34-P



BH-308									Date Sampled: 2014/12/12	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.0-3.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	3.4
6.1-6.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	3.8

BH-310									Date Sampled: 2014/12/13	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.0-3.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	2.1
5.5-6.1	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	3.8

BH-311									Date Sampled: 2014/12/13	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.0-3.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	6.3
5.5-6.1	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	2.2

BH-307									Date Sampled: 2014/12/11	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.8-4.4	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	5.4
6.1-6.7	<0.020	<0.020	0.054	<0.040	<10	<10	<50	<50	<0.50	8.5

BH-305									Date Sampled: 2014/12/10	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.8-4.4	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	2.4
5.3-5.9	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	3.8

BH-306									Date Sampled: 2014/12/11	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.0-3.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	<5.0
5.3-5.9	0.030	<0.020	0.12	0.12	<10	<10	<50	<50	<0.50	<5.0
5.3-5.9 (DUP-03)	0.037	<0.020	0.16	0.16	<10	<10	<50	<50	<0.50	<5.0

BH-303									Date Sampled: 2014/12/10	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.0-3.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	4.4
5.3-5.9	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	5.2

BH-302									Date Sampled: 2014/12/09	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2.4-3.0	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	5.3
5.3-5.9	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	2.1

BH-304									Date Sampled: 2014/12/10	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.0-3.7	<0.020	<0.020	0.76	1.6	41	<10	<50	<50	<0.50	4.4
5.3-5.9	<0.020	<0.020	0.15	0.12	<10	<10	<50	<50	<0.50	2.3
5.3-5.9 (DUP-02)	<0.020	<0.020	0.048	0.11	<10	<10	<50	<50	<0.50	3.5

BH-309									Date Sampled: 2014/12/12	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
3.0-3.7	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	3.7
5.3-5.9	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	2.1

BH-301									Date Sampled: 2014/12/09	
Sample Depth (mbgs)	B	T	E	X	F1	F2	F3	F4	Hx	Pb
4.0-4.4	<0.020	0.027	<0.020	<0.040	<10	<10	<50	<50	<0.50	6.2
5.3-5.9	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	5.4
5.3-5.9 (DUP-01)	<0.020	<0.020	<0.020	<0.040	<10	<10	<50	<50	<0.50	2.8

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/g — Micrograms Per Gram, dry weight basis

Analytical Results

All Results Reported in Óg/g

Location Where All Soil Samples Met Standards for All Parameters that Were Analyzed, Shown in Green

Location Where At Least One Soil Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red

1234 — Exceedances of Standards, Shown in Red and Bold

DUP — Field Duplicate Sample

< — Result Less Than Reportable Detection Limit

Standards

Parameters	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/g	0.4	78	19	30	65	250	2500	6600	88	120

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOECC Table 3 (2011)** Industrial/commercial/community, medium and fine textured soils

NV No Value

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

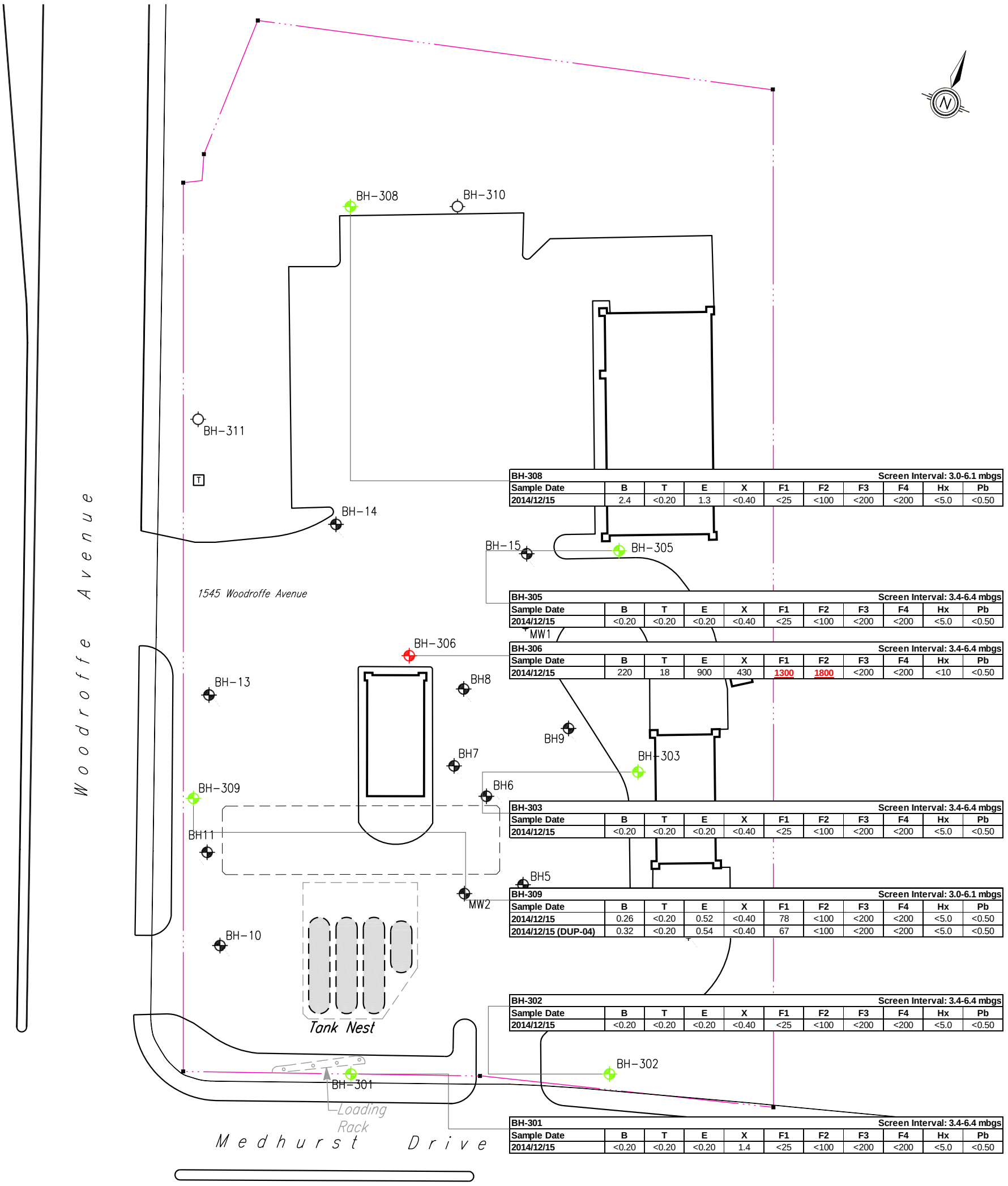
0 5 10 15 20 25m

Scale 1:500

Ref.: S-34-P

Soil Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead
Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: BAI	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: HNL	File No.: 8518B154	Date: 2015/01/20
PARSONS		Drawing No.: 5



BH-308 — Screen Interval: 3.0-6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2014/12/15	2.4	<0.20	1.3	<0.40	<25	<100	<200	<200	<5.0	<0.50

BH-305 — Screen Interval: 3.4-6.4 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2014/12/15	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	<5.0	<0.50

BH-306 — Screen Interval: 3.4-6.4 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2014/12/15	220	18	900	430	**1300**	**1800**	<200	<200	<10	<0.50

BH-303 — Screen Interval: 3.4-6.4 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2014/12/15	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	<5.0	<0.50

BH-309 — Screen Interval: 3.0-6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2014/12/15	0.26	<0.20	0.52	<0.40	78	<100	<200	<200	<5.0	<0.50
2014/12/15 (DUP-04)	0.32	<0.20	0.54	<0.40	67	<100	<200	<200	<5.0	<0.50

BH-302 — Screen Interval: 3.4-6.4 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2014/12/15	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	<5.0	<0.50

BH-301 — Screen Interval: 3.4-6.4 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2014/12/15	<0.20	<0.20	<0.20	1.4	<25	<100	<200	<200	<5.0	<0.50

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/L — Micrograms Per Litre

Analytical Results

- All Results Reported in Óg/L
- Location Where Most Recent Groundwater Sample Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where Most Recent Groundwater Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where No Groundwater Sample Was Submitted From the Most Recent Sampling Event, Shown in Black
- 1234 — Exceedances of Standards, Shown in Red and Bold
- DUP — Field Duplicate Sample
- – — Not Analyzed
- < — Result Less Than Reportable Detection Limit

Standards

Parameters	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/L	430	18 000	2300	4200	750	150	500	500	520	25

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOECC Table 3 (2011)** All types of property use, medium and fine textured soils

NV No Value

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Scale 1:500

Ref.: S-34-P

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead

Imperial Oil

1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: BAI	Page Size: 11 x 17 in	Ref. No.: 10-8518.3
Reviewed: HNL	File No.: 8518G155	Date: 2015/01/29
PARSONS		Drawing No.: 6

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH1	88.51	88.61	1.8 - 4.3	2008/11/19	>100%	DRY	DRY	DRY
				2008/12/11	45%	DRY	DRY	DRY
				2009/05/12	AW	AW	AW	AW
BH2	88.33	88.51	1.5 - 4.3	2008/11/19	325	ND	4.25	84.26
				2008/12/11	175	ND	3.40	85.11
				2009/05/12	AW	AW	AW	AW
BH3	88.50	88.63	4.6 - 6.1	2008/11/19	70%	ND	4.98	83.65
				2008/12/11	>100%	ND	4.95	83.69
				2009/05/12	AW	AW	AW	AW
BH4	88.62	88.72	4.2 - 6.1	2008/11/19	170	ND	5.06	83.65
				2008/12/11	5%	ND	5.04	83.68
				2009/05/12	AW	AW	AW	AW
BH5	88.79	88.85	1.8 - 4.6	2008/11/19	20%	ND	4.37	84.48
				2008/12/11	20%	ND	4.13	84.72
				2009/05/12	95	ND	3.17	85.68
	88.79	88.92		2010/03/16	75	ND	3.32	85.60
				2010/06/03	5%	ND	3.93	84.99
				2010/07/23	10%	ND	4.11	84.81
				2010/11/17	5%	ND	4.06	84.86
				2011/06/27	5%	ND	3.34	85.58
				2011/10/31	8%	ND	4.32	84.60
				2012/06/13	23%	ND	4.18	84.75
				2013/10/17	120	ND	4.33	84.59
				2014/04/07	NM	NM	NM	NM
				2014/06/16	30%	ND	3.72	85.20
				2014/12/15	NM	NM	NM	NM
BH6	88.77	88.89	2.0 - 4.7	2008/11/19	25%	ND	5.25	83.63
				2008/12/11	>100%	Sheen	5.23	83.66
				2009/05/12	11%	ND	4.99	83.90
	88.82	88.95		2010/03/16	25%	ND	5.09	83.86
				2010/06/03	>100%	ND	5.11	83.84
				2010/07/23	5%	ND	5.21	83.74
				2010/11/17	>100%	ND	5.11	83.84
				2011/06/27	>100%	ND	4.93	84.02
				2011/10/31	5%	ND	5.28	83.67
				2012/06/13	40%	ND	5.33	83.62
				2013/10/17	NM	NM	NM	NM
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	ND	5.12	83.83
				2014/12/15	NM	NM	NM	NM
BH7	88.87	88.94	2.0 - 4.7	2008/11/19	150	ND	3.86	85.07
				2008/12/11	225	ND	3.67	85.26
				2009/05/12	160	ND	3.14	85.79
	88.85	88.97		2010/03/16	50	ND	3.31	85.67
				2010/06/03	75	ND	3.55	85.42
				2010/07/23	100	ND	3.70	85.27
				2010/11/17	150	ND	3.60	85.37
				2011/06/27	120	ND	3.34	85.64
				2011/10/31	180	ND	3.99	84.98
				2012/06/13	150	ND	3.79	85.18
				2013/10/17	75	ND	4.08	84.89
				2014/04/07	NM	NM	NM	NM
				2014/06/16	10	ND	3.50	85.47
				2014/12/15	NM	NM	NM	NM

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH8	88.88	89.00	4.5 - 6.0	2010/03/16	75	ND	5.14	83.86
				2010/06/03	75	ND	5.18	83.82
				2010/07/23	150	ND	5.28	83.72
				2010/11/17	150	ND	5.18	83.82
				2011/06/27	140	ND	5.00	84.00
				2011/10/31	175	ND	5.35	83.66
				2012/06/13	5%	ND	5.41	83.60
				2013/10/17	>100%	DRY	DRY	DRY
				2014/04/07	NM	NM	NM	NM
				2014/06/16	88%	ND	5.20	83.80
				2014/12/15	NM	NM	NM	NM
BH9	88.97	89.10	5.8 - 7.3	2010/03/16	25	ND	5.23	83.87 *
				2010/06/03	25	ND	5.27	83.83 *
				2010/07/23	25	ND	5.37	83.73 *
				2010/11/17	50	ND	5.27	83.83 *
				2011/06/27	<5	ND	5.09	84.01 *
				2011/10/31	60	ND	5.43	83.67 *
				2012/06/13	80	ND	5.49	83.61 *
				2013/10/17	NM	NM	NM	NM
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	ND	5.28	83.82 *
				2014/12/15	NM	NM	NM	NM
BH10	88.47	88.56	1.5 - 4.1	2010/03/16	50	DRY	DRY	DRY
				2010/06/03	100	DRY	DRY	DRY
				2010/07/23	100	DRY	DRY	DRY
				2010/11/17	150	DRY	DRY	DRY
				2011/06/27	80	DRY	DRY	DRY
	88.46	88.56	3.7 - 6.1	2011/10/31	13%	ND	4.87	83.69
				2012/06/13	20%	ND	4.94	83.62
				2013/10/16	37%	ND	5.71	82.85
				2014/04/07	35%	NA	NA	NA
				2014/06/16	>100%	ND	4.72	83.84
				2014/12/15	NM	NM	NM	NM
BH11	88.43	88.57	3.1 - 6.1	2010/03/16	5%	ND	4.70	83.87
				2010/06/03	500	ND	4.72	83.85
				2010/07/23	15%	ND	4.82	83.75
				2010/11/17	15%	ND	4.73	83.84
				2011/06/27	325	ND	4.44	84.13
	88.53	88.57		2011/10/31	16%	ND	4.79	83.78
				2012/06/13	22%	ND	4.86	83.71
				2013/10/16	27%	ND	5.65	82.92
				2014/04/07	20%	ND	5.09	83.48
				2014/06/16	>100%	ND	4.64	83.93
				2014/12/15	NM	NM	NM	NM
BH12	88.74	88.82	3.0 - 6.0	2010/03/16	>100%	ND	4.97	83.86
				2010/06/03	225	ND	4.99	83.83
				2010/07/23	>100%	ND	5.09	83.73
				2010/11/17	>100%	ND	5.00	83.82
				2011/06/27	>100%	73 (4)	4.80	84.02
				2011/10/31	240	2 (0)	5.15	83.67
				2012/06/13	100%	Sheen	5.22	83.60
				2013/10/17	>100%	ND	5.99	82.83
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	Sheen	5.01	83.81
				2014/12/15	NM	NM	NM	NM

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH-13	88.42	88.49	3.7 - 6.1	2011/10/31	17%	ND	3.83	84.65
				2012/06/13	40%	ND	4.90	83.59
				2013/10/17	50%	ND	5.69	82.80
				2014/04/07	70%	NA	NA	NA
				2014/06/16	>100%	ND	4.68	83.81
				2014/12/15	NM	NM	NM	NM
BH-14	88.77	88.85	3.7 - 6.1	2011/10/31	12%	ND	5.23	83.63
				2012/06/13	50%	ND	5.28	83.57 *
				2013/10/17	75%	ND	6.10	82.75 *
				2014/04/07	NM	NM	NM	NM
				2014/06/16	15%	ND	5.08	83.77 *
				2014/12/15	NM	NM	NM	NM
BH-15	88.83	88.94	3.0 - 6.1	2011/10/31	400	ND	5.29	83.66
				2012/06/13	215	ND	5.33	83.61 *
				2013/10/17	65	ND	5.79	83.15 *
				2014/04/07	NM	NM	NM	NM
				2014/06/16	120	ND	3.76	85.18 *
				2014/12/15	NM	NM	NM	NM
BH-16	88.80	88.95	2.9 - 5.9	2012/06/13	<5	ND	5.34	83.61
				2013/10/17	25%	ND	6.10	82.85
				2014/04/07	NM	NM	NM	NM
				2014/06/16	53%	ND	5.11	83.85
				2014/12/15	NM	NM	NM	NM
BH-301	99.50	99.61	3.4 -6.4	2014/12/15	200	ND	4.95	94.65
BH-302	99.38	99.56	3.4 -6.4	2014/12/15	220	ND	4.91	94.66
BH-303	100.00	100.12	3.4 -6.4	2014/12/15	125	ND	3.58	96.54
BH-305	100.16	100.27	3.4 -6.4	2014/12/15	<5	ND	4.09	96.18
BH-306	99.81	99.92	3.4 -6.4	2014/12/15	40	ND	5.32	94.60
BH-308	99.93	100.05	3.0 -6.1	2014/12/15	<5	ND	4.08	95.97
BH-309	99.46	99.58	3.0 -6.1	2014/12/15	140	ND	4.96	94.62

1 - Relative to local benchmark (BH5 top of riser pipe) having an elevation of 88.79 m
BH-300 series - Relative to local benchmark (cut into concrete at base of the diesel pumps) having an elevation of 100.00 m
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75
AW - Abandoned well
m - metres
mbgs - metres below ground surface
mm - millimetres
ND - Not detected
( ) - After bailing/purging
* - Water level above top of screen

TABLE 2

SOIL ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-301-4.0-4.4	BH-301-5.3-5.9	DUP-01 FIELD DUPLICATE BH-301-5.3-5.9	BH-302-2.4-3.0	BH-302-5.3-5.9	BH-303-3.0-3.7	BH-303-5.3-5.9	BH-304-3.0-3.7	BH-304-5.3-5.9	DUP-02 FIELD DUPLICATE BH-304-5.3-5.9	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N6049V1	B4N6049V1	B4N6049V1	B4N6049V1	B4N6049V1	B4N7072V1	B4N7072V1	B4N7072V1	B4N7072V1	B4N7072V1	
MAXXAM Sample ID	YV6417	YV6418	YV6419	YV6420	YV6421	YW2041	YW2042	YW2043	YW2044	YW2045	
Sample Depth (mbgs)	4.0-4.4	5.3-5.9	5.3-5.9	2.4-3.0	5.3-5.9	3.0-3.7	5.3-5.9	3.0-3.7	5.3-5.9	5.3-5.9	
Date Sampled (yyyy/mm/dd)	2014/12/09	2014/12/09	2014/12/09	2014/12/09	2014/12/09	2014/12/10	2014/12/10	2014/12/10	2014/12/10	2014/12/10	
PARAMETERS											
Benzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.4
Toluene	0.027	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	78
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.76	0.15	0.048	19
Total Xylenes	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.6	0.12	0.11	30
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	<10	<10	<10	<10	<10	41	<10	<10	65
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	250
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	2500
Petroleum Hydrocarbons F4 (>C34 - C50)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	6600
Hexane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	88
Lead	6.2	5.4	2.8	5.3	2.1	4.4	5.2	4.4	2.3	3.5	120

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
"-" - Not analyzed
* - Result from F4 gravimetric analysis
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 2

SOIL ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-305-3.8-4.4	BH-305-5.3-5.9	BH-306-3.0-3.7	BH-306-5.3-5.9	DUP-03 FIELD DUPLICATE BH-306-5.3-5.9	BH-307-3.8-4.4	BH-307-6.1-6.7	BH-308-3.0-3.7	BH-308-6.1-6.7	BH-309-3.0-3.7	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N7072V1	B4N7072V1	B4N7299V1	B4N7299V1	B4N7299V1	B4N7299V1	B4N7299V1	B4N7305V1	B4N7305V1	B4N7305V1	
MAXXAM Sample ID	YW2046	YW2047	YW3227	YW3228	YW3229	YW3230	YW3231	YW3246	YW3247	YW3248	
Sample Depth (mbgs)	3.8-4.4	5.3-5.9	3.0-3.7	5.3-5.9	5.3-5.9	3.8-4.4	6.1-6.7	3.0-3.7	6.1-6.7	3.0-3.7	
Date Sampled (yyyy/mm/dd)	2014/12/10	2014/12/10	2014/12/11	2014/12/11	2014/12/11	2014/12/11	2014/12/11	2014/12/12	2014/12/12	2014/12/12	
PARAMETERS											
Benzene	<0.020	<0.020	<0.020	0.030	0.037	<0.020	<0.020	<0.020	<0.020	<0.020	0.4
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	78
Ethylbenzene	<0.020	<0.020	<0.020	0.12	0.16	<0.020	0.054	<0.020	<0.020	<0.020	19
Total Xylenes	<0.040	<0.040	<0.040	0.12	0.16	<0.040	<0.040	<0.040	<0.040	<0.040	30
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	65
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	250
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	2500
Petroleum Hydrocarbons F4 (>C34 - C50)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	6600
Hexane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	88
Lead	2.4	3.8	<5.0	<5.0	<5.0	5.4	8.5	3.4	3.8	3.7	120

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
"-" - Not analyzed
* - Result from F4 gravimetric analysis
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 2

SOIL ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-309-5.3-5.9	BH-310-3.0-3.7	BH-310-5.5-6.1	BH-311-3.0-3.7	BH-311-5.5-6.1	
MAXXAM Certificate of Analysis No.	B4N7305V1	B4N9454V1	B4N9454V1	B4N9434V1	B4N9434V1	TABLE 3 STANDARDS[a]
MAXXAM Sample ID	YW3249	YX3167	YX3168	YX3054	YX3055	
Sample Depth (mbgs)	5.3-5.9	3.0-3.7	5.5-6.1	3.0-3.7	5.5-6.1	
Date Sampled (yyyy/mm/dd)	2014/12/12	2014/12/13	2014/12/13	2014/12/13	2014/12/13	
PARAMETERS						
Benzene	<0.020	<0.020	<0.020	<0.020	<0.020	0.4
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	78
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	<0.020	19
Total Xylenes	<0.040	<0.040	<0.040	<0.040	<0.040	30
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	<10	<10	<10	65
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	<10	<10	<10	250
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<50	<50	<50	<50	<50	2500
Petroleum Hydrocarbons F4 (>C34 - C50)	<50	<50	<50	<50	<50	6600
Hexane	<0.50	<0.50	<0.50	<0.50	<0.50	88
Lead	2.1	2.1	3.8	6.3	2.2	120

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

mbgs - metres below ground surface

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 3

SOIL ANALYTICAL RESULTS
SELECTED VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	BH-303-3.0-3.7	BH-303-5.3-5.9	BH-305-3.8-4.4	BH-305-5.3-5.9	BH-308-3.0-3.7	BH-308-6.1-6.7	BH-310-3.0-3.7	BH-310-5.5-6.1	
MAXXAM Certificate of Analysis No.	B4N7072V1	B4N7072V1	B4N7072V1	B4N7072V1	B4N7305V1	B4N7305V1	B4N9454V1	B4N9454V1	TABLE 3 STANDARDS[a]
MAXXAM Sample ID	YW2041	YW2042	YW2046	YW2047	YW3246	YW3247	YX3167	YX3168	
Sample Depth (mbgs)	3.0-3.7	5.3-5.9	3.8-4.4	5.3-5.9	3.0-3.7	6.1-6.7	3.0-3.7	5.5-6.1	
Date Sampled (yyyy/mm/dd)	2014/12/10	2014/12/10	2014/12/10	2014/12/10	2014/12/12	2014/12/12	2014/12/13	2014/12/13	
PARAMETERS									
Dichlorodifluoromethane	-	-	<0.050	<0.050	-	-	-	-	25
1,1-Dichloroethane	-	-	<0.050	<0.050	-	-	-	-	21
1,2-Dichloroethane	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.05
1,1-Dichloroethylene	-	-	<0.050	<0.050	-	-	-	-	0.48
cis-1,2-Dichloroethylene	-	-	<0.050	<0.050	-	-	-	-	37
trans-1,2-Dichloroethylene	-	-	<0.050	<0.050	-	-	-	-	9.3
Ethylene Dibromide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.05
Methyl t-butyl ether	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3.2
Tetrachloroethylene	-	-	<0.050	<0.050	-	-	-	-	21
1,1,1-Trichloroethane	-	-	<0.050	<0.050	-	-	-	-	12
1,1,2-Trichloroethane	-	-	<0.050	<0.050	-	-	-	-	0.11
Trichloroethylene	-	-	<0.050	<0.050	-	-	-	-	0.61
Trichlorofluoromethane	-	-	<0.050	<0.050	-	-	-	-	5.8
Vinyl Chloride	-	-	<0.020	<0.020	-	-	-	-	0.25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 4

SOIL ANALYTICAL RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	BH-301-4.0-4.4	BH-301-5.3-5.9	DUP-01 FIELD DUPLICATE BH-301-5.3-5.9	BH-302-2.4-3.0	BH-302-5.3-5.9	BH-303-3.0-3.7	BH-303-5.3-5.9	BH-304-3.0-3.7	BH-304-5.3-5.9	DUP-02 FIELD DUPLICATE BH-304-5.3-5.9	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N6049V1	B4N6049V1	B4N6049V1	B4N6049V1	B4N6049V1	B4N7072V1	B4N7072V1	B4N7072V1	B4N7072V1	B4N7072V1	
MAXXAM Sample ID	YV6417	YV6418	YV6419	YV6420	YV6421	YW2041	YW2042	YW2043	YW2044	YW2045	
Sample Depth (mbgs)	4.0-4.4	5.3-5.9	5.3-5.9	2.4-3.0	5.3-5.9	3.0-3.7	5.3-5.9	3.0-3.7	5.3-5.9	5.3-5.9	
Date Sampled (yyyy/mm/dd)	2014/12/09	2014/12/09	2014/12/09	2014/12/09	2014/12/09	2014/12/10	2014/12/10	2014/12/10	2014/12/10	2014/12/10	
PARAMETERS											
Acenaphthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	96
Acenaphthylene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.17
Anthracene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.74
Benzo(a)anthracene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Benzo(a)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.3
Benzo(b/j)fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Benzo(g,h,i)perylene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Benzo(k)fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Chrysene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Dibenz(a,h)anthracene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.1
Fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Fluorene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	69
Indeno(1,2,3-cd)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.95
1-Methylnaphthalene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.036	0.035	0.023	85
2-Methylnaphthalene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.041	0.020	0.010	85
Total Methylnaphthalenes	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.077	0.056	0.033	85
Naphthalene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.029	0.0056	<0.0050	28
Phenanthrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0079	0.0063	16
Pyrene	0.0061	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	96

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 4

SOIL ANALYTICAL RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	BH-305-3.8-4.4	BH-305-5.3-5.9	BH-306-3.0-3.7	BH-306-5.3-5.9	DUP-03 FIELD DUPLICATE BH-306-5.3-5.9	BH-307-3.8-4.4	BH-307-6.1-6.7	BH-308-3.0-3.7	BH-308-6.1-6.7	BH-309-3.0-3.7	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N7072V1	B4N7072V1	B4N7299V1	B4N7299V1	B4N7299V1	B4N7299V1	B4N7299V1	B4N7305V1	B4N7305V1	B4N7305V1	
MAXXAM Sample ID	YW2046	YW2047	YW3227	YW3228	YW3229	YW3230	YW3231	YW3246	YW3247	YW3248	
Sample Depth (mbgs)	3.8-4.4	5.3-5.9	3.0-3.7	5.3-5.9	5.3-5.9	3.8-4.4	6.1-6.7	3.0-3.7	6.1-6.7	3.0-3.7	
Date Sampled (yyyy/mm/dd)	2014/12/10	2014/12/10	2014/12/11	2014/12/11	2014/12/11	2014/12/11	2014/12/11	2014/12/12	2014/12/12	2014/12/12	
PARAMETERS											
Acenaphthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	96
Acenaphthylene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.17
Anthracene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.74
Benzo(a)anthracene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	0.96
Benzo(a)pyrene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	0.3
Benzo(b/j)fluoranthene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	0.96
Benzo(g,h,i)perylene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	9.6
Benzo(k)fluoranthene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	0.96
Chrysene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	9.6
Dibenz(a,h)anthracene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	0.1
Fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Fluorene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	69
Indeno(1,2,3-cd)pyrene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	0.95
1-Methylnaphthalene	<0.0050	<0.0050	<0.0050	0.015	0.017	<0.0050	0.0069	<0.0050	<0.0050	<0.0050	85
2-Methylnaphthalene	<0.0050	<0.0050	<0.0050	0.0061	0.0076	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	85
Total Methylnaphthalenes	<0.0071	<0.0071	<0.0071	0.021	0.024	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	85
Naphthalene	<0.0050	<0.0050	<0.0050	<0.0050	0.0051	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	28
Phenanthrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	16
Pyrene	<0.0050	<0.0050	-	-	-	-	-	<0.0050	<0.0050	<0.0050	96

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

"-" - Not analyzed

mbgs - metres below ground surface

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 4

SOIL ANALYTICAL RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	BH-309-5.3-5.9	BH-310-3.0-3.7	BH-310-5.5-6.1	BH-311-3.0-3.7	BH-311-5.5-6.1	
MAXXAM Certificate of Analysis No.	B4N7305V1	B4N9454V1	B4N9454V1	B4N9434V1	B4N9434V1	TABLE 3 STANDARDS[a]
MAXXAM Sample ID	YW3249	YX3167	YX3168	YX3054	YX3055	
Sample Depth (mbgs)	5.3-5.9	3.0-3.7	5.5-6.1	3.0-3.7	5.5-6.1	
Date Sampled (yyyy/mm/dd)	2014/12/12	2014/12/13	2014/12/13	2014/12/13	2014/12/13	
PARAMETERS						
Acenaphthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	96
Acenaphthylene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.17
Anthracene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.74
Benzo(a)anthracene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Benzo(a)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.3
Benzo(b/j)fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Benzo(g,h,i)perylene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Benzo(k)fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Chrysene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Dibenz(a,h)anthracene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.1
Fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Fluorene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	69
Indeno(1,2,3-cd)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.95
1-Methylnaphthalene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	85
2-Methylnaphthalene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	85
Total Methylnaphthalenes	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	85
Naphthalene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	28
Phenanthrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	16
Pyrene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	96

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

"-" - Not analyzed

mbgs - metres below ground surface

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 5

SOIL ANALYTICAL RESULTS
SELECTED METALS

SAMPLE LOCATIONS	BH-301-4.0-4.4	BH-301-5.3-5.9	DUP-01 FIELD DUPLICATE BH-301-5.3-5.9	BH-302-2.4-3.0	BH-302-5.3-5.9	BH-303-3.0-3.7	BH-303-5.3-5.9	BH-304-3.0-3.7	BH-304-5.3-5.9	DUP-02 FIELD DUPLICATE BH-304-5.3-5.9	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N6049V1	B4N6049V1	B4N6049V1	B4N6049V1	B4N6049V1	B4N7072V1	B4N7072V1	B4N7072V1	B4N7072V1	B4N7072V1	
MAXXAM Sample ID	YV6417	YV6418	YV6419	YV6420	YV6421	YW2041	YW2042	YW2043	YW2044	YW2045	
Sample Depth (mbgs)	4.0-4.4	5.3-5.9	5.3-5.9	2.4-3.0	5.3-5.9	3.0-3.7	5.3-5.9	3.0-3.7	5.3-5.9	5.3-5.9	
Date Sampled (yyyy/mm/dd)	2014/12/09	2014/12/09	2014/12/09	2014/12/09	2014/12/09	2014/12/10	2014/12/10	2014/12/10	2014/12/10	2014/12/10	
PARAMETERS											
Arsenic	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	18
Barium	32	23	28	220	42	150	280	200	33	26	670
Chromium (Total)	8.0	9.0	5.2	44	6.4	35	58	44	9.1	11	160
Copper	6.3	9.7	25	21	9.6	18	27	21	11	14	300
Zinc	11	11	30	51	13	47	69	54	12	15	340

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils
"-" - Not analyzed
* - Result from F4 gravimetric analysis
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 5

SOIL ANALYTICAL RESULTS
SELECTED METALS

SAMPLE LOCATIONS	BH-305-3.8-4.4	BH-305-5.3-5.9	BH-308-3.0-3.7	BH-308-6.1-6.7	BH-309-3.0-3.7	BH-309-5.3-5.9	BH-310-3.0-3.7	BH-310-5.5-6.1	BH-311-3.0-3.7	BH-311-5.5-6.1	
MAXXAM Certificate of Analysis No.	B4N7072V1	B4N7072V1	B4N7305V1	B4N7305V1	B4N7305V1	B4N7305V1	B4N9454V1	B4N9454V1	B4N9434V1	B4N9434V1	TABLE 3 STANDARDS[a]
MAXXAM Sample ID	YW2046	YW2047	YW3246	YW3247	YW3248	YW3249	YX3167	YX3168	YX3054	YX3055	
Sample Depth (mbgs)	3.8-4.4	5.3-5.9	3.0-3.7	6.1-6.7	3.0-3.7	5.3-5.9	3.0-3.7	5.5-6.1	3.0-3.7	5.5-6.1	
Date Sampled (yyyy/mm/dd)	2014/12/10	2014/12/10	2014/12/12	2014/12/12	2014/12/12	2014/12/12	2014/12/13	2014/12/13	2014/12/13	2014/12/13	
PARAMETERS											
Arsenic	<1.0	1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18
Barium	66	120	97	150	120	30	64	140	270	37	670
Chromium (Total)	22	39	26	41	35	7.5	19	41	72	6.1	160
Copper	13	19	16	21	19	8.3	9.1	21	32	12	300
Zinc	26	46	33	52	41	12	20	48	89	18	340

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils
"-" - Not analyzed
* - Result from F4 gravimetric analysis
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 6

SOIL ANALYTICAL RESULTS
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATIONS	BH-305-3.8-4.4	BH-305-5.3-5.9	
MAXXAM Certificate of Analysis No.	B4N7072V1	B4N7072V1	TABLE 3 STANDARDS[a]
MAXXAM Sample ID	YW2046	YW2047	
Sample Depth (mbgs)	3.8-4.4	5.3-5.9	
Date Sampled (yyyy/mm/dd)	2014/12/10	2014/12/10	
PARAMETERS			
Total Polychlorinated Biphenyls	<0.020	<0.020	1.1

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

"-" - Not analyzed

mbgs - metres below ground surface

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 7

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-301	BH-302	BH-303	BH-305	BH-306	BH-308	BH-309	DUP-04 FIELD DUPLICATE BH-309	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N9500V1	B4N9500V1	B4N9487V1	B4N9487V1	B4N9466V1	B4N9487V1	B4N9466V1	B4N9466V1	
MAXXAM Sample ID	YX3350	YX3349	YX3296	YX3295	YX3183	YX3294	YX3184	YX3185	
Date Sampled (yyyy/mm/dd)	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	
PARAMETERS									
Benzene	<0.20	<0.20	<0.20	<0.20	220	2.4	0.26	0.32	430
Toluene	<0.20	<0.20	<0.20	<0.20	18	<0.20	<0.20	<0.20	18 000
Ethylbenzene	<0.20	<0.20	<0.20	<0.20	900	1.3	0.52	0.54	2300
Total Xylenes	1.4	<0.40	<0.40	<0.40	430	<0.40	<0.40	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<25	<25	<25	<25	1300	<25	78	67	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	<100	<100	<100	1800	<100	<100	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	<200	<200	<200	<200	<200	<200	<200	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	<200	<200	<200	<200	<200	<200	<200	500
Hexane	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	520
Lead	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
"-" - Not analyzed
* - Result from F4 gravimetric analysis
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 8

GROUNDWATER ANALYTICAL RESULTS
SELECTED VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	BH-301	BH-302	BH-303	BH-305	BH-306	BH-308	BH-309	DUP-04 FIELD DUPLICATE BH-309	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N9500V1	B4N9500V1	B4N9487V1	B4N9487V1	B4N9466V1	B4N9487V1	B4N9466V1	B4N9466V1	
MAXXAM Sample ID	YX3350	YX3349	YX3296	YX3295	YX3183	YX3294	YX3184	YX3185	
Date Sampled (yyyy/mm/dd)	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	
PARAMETERS									
Dichlorodifluoromethane	-	-	-	<0.50	-	-	-	-	4400
1,1-Dichloroethane	-	-	-	<0.10	-	-	-	-	3100
1,2-Dichloroethane	<0.20	<0.20	<0.20	<0.20	<20	<0.20	<0.20	<0.20	12
1,1-Dichloroethylene	-	-	-	<0.10	-	-	-	-	17
cis-1,2-Dichloroethylene	-	-	-	<0.10	-	-	-	-	17
trans-1,2-Dichloroethylene	-	-	-	<0.10	-	-	-	-	17
Ethylene Dibromide	<0.20	<0.20	<0.20	<0.20	<20	<0.20	<0.20	<0.20	0.83
Methyl t-butyl ether	<0.20	<0.20	<0.20	<0.20	<20	<0.20	1.0	0.98	1400
Tetrachloroethylene	-	-	-	<0.10	-	-	-	-	17
1,1,1-Trichloroethane	-	-	-	<0.10	-	-	-	-	6700
1,1,2-Trichloroethane	-	-	-	<0.20	-	-	-	-	30
Trichloroethylene	-	-	-	<0.10	-	-	-	-	17
Trichlorofluoromethane	-	-	-	<0.20	-	-	-	-	2500
Vinyl Chloride	-	-	-	<0.20	-	-	-	-	1.7

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soil

"-" - Not analyzed

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 9

GROUNDWATER ANALYTICAL RESULTS
SELECTED METALS

SAMPLE LOCATIONS	BH-301	BH-302	BH-303	BH-305	BH-308	BH-309	DUP-04 FIELD DUPLICATE BH-309	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B4N9500V1	B4N9500V1	B4N9487V1	B4N9487V1	B4N9487V1	B4N9466V1	B4N9466V1	
MAXXAM Sample ID	YX3350	YX3349	YX3296	YX3295	YX3294	YX3184	YX3185	
Date Sampled (yyyy/mm/dd)	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	2014/12/15	
PARAMETERS								
Arsenic	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1900
Barium	150	120	200	410	330	360	350	29 000
Chromium	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	810
Copper	<2.0	<2.0	1.4	<1.0	<5.0	<2.0	<2.0	87
Zinc	<5.0	<5.0	<5.0	<5.0	6.4	<5.0	<5.0	1100

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils

"-" - Not analyzed

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

APPENDIX A

BOREHOLE LOGS

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-301**
CLIENT: Imperial Oil		START DATE: 2014/12/09
		COMPLETION DATE: 2014/12/09
		PAGE 1 of 1

Depth (m)	STRATIGRAPHY	SYMBOL	SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES ▼ Groundwater Potentiometric Surface on date noted	MONITORING WELL	Depth (ft)
0	GROUND SURFACE								Surface Cover: Flush Mount, 203 mm		0
	ORGANIC MATERIAL.		G	-	-						
	SILT - olive brown, sandy, some gravel, damp.										
	SAND - olive, medium to fine grained, some gravel, damp.		G	-	-						
1			G	-	-						5
2											
3			SS	-	-						10
4			SS	-	-		BH-301-4.0-4.4 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				
	SAND - dark grayish brown, coarse to medium grained, trace gravel, moist.		SS	7	66				2014/12/15 ▼		15
5											
	SAND - dark gray, coarse to medium grained, gravelly, wet.		SS	14	75		BH-301-5.3-5.9 (DUP-01) / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				
6											20
	END OF BOREHOLE at 6.5 m								Monitoring Well Installed Well Depth 6.4 m Well Diameter 51 mm Well Material PVC Screen Type 10 Slot Screened From 3.4 m Screened To 6.4 m		
	Borehole Daylighted to 2.4 m										
7											25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/09	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/09	2.4 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

8518.3 BHS.GPJ PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-302**
CLIENT: Imperial Oil		START DATE: 2014/12/09
		COMPLETION DATE: 2014/12/09
		PAGE 1 of 1

Depth (m)	STRATIGRAPHY	SYMBOL	SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft)
0	GROUND SURFACE								Surface Cover: Flush Mount, 203 mm		0
	ORGANIC MATERIAL.										
	SILT - olive brown, sandy, some gravel, trace cobbles, damp.		G	-	-						
1	SAND - olive gray, coarse to medium grained, gravelly, some silt, trace cobbles, damp.		G	-	-						5
2			G	-	-						
	SAND - olive gray, medium to fine grained, silty, some gravel, moist.		SS	4	67		BH-302-2.4-3.0 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				
3	SILT - clayey, moist.		SS	1	71						10
4	SAND - dark gray, coarse to medium grained, gravelly, trace cobbles, moist.		SS	4	54						
			SS	12	71				2014/12/15		15
5	- wet below 5.5 m.		SS	4	58		BH-302-5.3-5.9 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				
6	END OF BOREHOLE at 6.5 m								Monitoring Well Installed Well Depth 6.4 m Well Diameter mm Well Material PVC Screen Type 10 Slot Screened From 3.4 m Screened To 6.4 m		20
	Borehole Daylighted to 2.4 m										
7											25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle		
2014/12/09	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM	REVIEW: HNL	DRAFTED: LLB
2014/12/09	2.4 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd			

PARSONS

PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015
8518.3 BHS.GPJ

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-303**
CLIENT: Imperial Oil		START DATE: 2014/12/09
		COMPLETION DATE: 2014/12/10
		PAGE 1 of 2

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES ▼ Groundwater Potentiometric Surface on date noted	MONITORING WELL	Depth (ft)
0	GROUND SURFACE								Surface Cover: Flush Mount, 203 mm		0
	ORGANIC MATERIAL.										
	SILT - olive gray, sandy, some gravel, trace cobbles, damp.		G	-	-						
	- trace boulders below 0.6 m.										
1			G	-	-						5
			G	-	-						
2	CLAY - olive gray, silty, some sand, moist.										
	SAND - olive gray, medium to fine grained, silty, some gravel, moist.		SS	9	100						
3	CLAY - olive gray, silty, moist.		SS	4	100		BH-303-3.0-3.7 / BTEX, PHC F1-F4, VOC, PAH, Sel-Metals		2014/12/15 ▼		10
	SILT - some clay, wet. - silt seams at 4.0 m.		SS		100						
4											
5			SS	2	100						15
			SS	1	100		BH-303-5.3-5.9 / BTEX, PHC F1-F4, VOC, PAH, Sel-Metals				
6	SAND - gray, medium to fine grained, gravelly, wet.										20
7											
8											25
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/09	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/10	1.8 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015
8518.3 BHS.GPJ

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-303**
CLIENT: Imperial Oil		START DATE: 2014/12/09
		COMPLETION DATE: 2014/12/10
		PAGE 2 of 2

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES: ▼ Groundwater Potentiometric Surface on date noted	MONITORING WELL	Depth (ft)
9	SAND - gray, medium to fine grained, gravelly, wet. (stratum description carried forward)										30
10											35
11											
12											40
13											
14	END OF BOREHOLE - Refusal at 13.9 m Borehole Daylighted to 1.8 m								Monitoring Well Installed Well Depth 6.4 m Well Diameter 51 mm Well Material PVC Screen Type 10 Slot Screened From 3.4 m Screened To 6.4 m		45
15											50
16											
17											55
18											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/09	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/10	1.8 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015
8518.3 BHS.GPJ

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-304**
CLIENT: Imperial Oil		START DATE: 2014/12/10
		COMPLETION DATE: 2014/12/10
		PAGE 1 of 2

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS	BACKFILL	Depth (ft)
0	GROUND SURFACE											0
	GRAVEL - gray, some sand, trace cobbles.		G	-	-							
1	CLAY - olive gray, some silt, moist, petroleum odour.		G	-	-							5
2												
	SAND - olive gray, medium to fine grained, some gravel, wet.		G	-	-							
3			SS	-	100		BH-304-3.0-3.7 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals					10
4			SS	-	100							
5			SS	23	100							15
	- trace odour at 5.2 m.		SS	23	100		BH-304-5.3-5.9 (DUP-02) / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals					
6			SS	8	100							20
7												
8												25
9												

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/10	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/10	2.7 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

8518.3 BHS.GPJ PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-304**
CLIENT: Imperial Oil		START DATE: 2014/12/10
		COMPLETION DATE: 2014/12/10
		PAGE 2 of 2

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS	BACKFILL	Depth (ft)
9	SAND - olive gray, medium to fine grained, some gravel, wet. (stratum description carried forward)											30
10												35
11												
12												40
13												
14	END OF BOREHOLE - Refusal at 14.0 m Borehole Daylighted to 2.7 m									No Monitoring Well Installed		45
15												50
16												
17												55
18												

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/10	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/10	2.7 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

8518.3 BHS.GPJ PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-305**
CLIENT: Imperial Oil		START DATE: 2014/12/10
		COMPLETION DATE: 2014/12/10
		PAGE 1 of 2

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft)
0	GROUND SURFACE								Surface Cover: Flush Mount, 203 mm		0
	ORGANIC MATERIAL.										
	SILT - olive brown, sandy, some gravel, trace cobbles, damp.		G	-	-						
1	- trace boulders below 0.6 m.		G	-	-						5
2											
	CLAY - olive gray, some silt, trace sand, wet.		G	-	-						
3	- silt and sand seams at 4.2 m.		SS	4	75						10
4	- wet below 4.0 m.		SS	2	79		BH-305-3.8-4.4 / BTEX, PHC F1-F4, Sel-VOC, PAH, PCB, Sel-Metals		▼ 2014/12/15		15
5			SS	-	79						
			SS	-	79		BH-305-5.3-5.9 / BTEX, PHC F1-F4, Sel-VOC, PAH, PCB, Sel-Metals				20
6			SS	-	0						
7											25
8			SS	-	0						
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/10	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/10	2.4 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015 8518.3 BHS.GPJ

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-305**
CLIENT: Imperial Oil		START DATE: 2014/12/10
		COMPLETION DATE: 2014/12/10
		PAGE 2 of 2

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft)
9	CLAY - olive gray, some silt, trace sand, wet. (stratum description carried forward)								▼ Groundwater Potentiometric Surface on date noted		30
10											35
11											
12											40
	END OF BOREHOLE - Refusal at 12.5 m								Monitoring Well Installed		
13	Borehole Daylighted to 2.4 m								Well Depth 6.4 m Well Diameter 51 mm Well Material PVC Screen Type 10 Slot Screened From 3.4 m Screened To 6.4 m		45
14											
15											50
16											
17											55
18											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/10	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/10	2.4 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

8518.3 BHS.GPJ PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-306**
CLIENT: Imperial Oil		START DATE: 2014/12/11
		COMPLETION DATE: 2014/12/12
		PAGE 1 of 1

Depth (m)	STRATIGRAPHY	SYMBOL	SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft)
0	GROUND SURFACE								Surface Cover: Flush Mount, 203 mm		0
	ASPHALT.										
	GRAVEL - gray, sandy, trace cobbles, damp.		G	-	-						
1	SAND - olive gray, gravelly, some silt, damp.		G	-	-						5
2			G	-	-						
	CLAY - mottled olive gray and yellowish brown, silty, damp. - silt and sand seams.										
3			SS	-	79		BH-306-3.0-3.7 / BTEX, PHC F1-F4, Hexane, Lead, Sel-PAH				10
	- wet below 3.7 m.		SS	-	83						
4											
5			SS	0	79						15
	SAND - gray, medium to fine grained, wet.								2014/12/15		
	- grayish brown, coarse to medium grained sand, some gravel, petroleum odour below 5.5 m.		SS	13	71		BH-306-5.3-5.9 (DUP-03) / BTEX, PHC F1-F4, Hexane, Lead, Sel-PAH				
6			SS	9	75						20
	END OF BOREHOLE at 6.7 m								Monitoring Well Installed		
7	Borehole Daylighted to 2.7 m								Well Depth 6.4 m Well Diameter 51 mm Well Material PVC Screen Type 10 Slot Screened From 3.4 m Screened To 6.4 m		25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/11	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/11	2.7 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

8518.3 BHS.GPJ PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-307**
CLIENT: Imperial Oil		START DATE: 2014/12/10
		COMPLETION DATE: 2014/12/11
		PAGE 1 of 1

Depth (m)	STRATIGRAPHY	SYMBOL	SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS	BACKFILL	Depth (ft)
0	GROUND SURFACE										0
	ASPHALT.										
	GRAVEL - gray, sandy, some silt, trace cobbles, damp.		G	-	-						
1	SILT - dark olive, sandy, some gravel, trace clay, damp.										
	SAND - olive gray, medium to fine grained, damp.		G	-	-						5
2											
	SILT - dark gray, some clay, trace gravel, moist.		G	-	-						
	- silt and sand seams.										
3			SS	-	67						10
	CLAY - olive gray, silty, wet.										
4			SS	1	79		BH-307-3.8-4.4 / BTEX, PHC F1-F4, Hexane, Lead, Sel-PAH				
			SS	0	83						15
5											
			SS	0	83						
6	SAND - olive gray, medium to fine grained, some gravel, wet, petroleum odour.		SS	6	75		BH-307-6.1-6.7 / BTEX, PHC F1-F4, Hexane, Lead, Sel-PAH				20
7											
	END OF BOREHOLE at 7.3 m								No Monitoring Well Installed		
	Borehole Daylighted to 2.4 m										25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/10	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/11	2.4 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

8518.3 BHS.GPJ

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-308**
CLIENT: Imperial Oil		START DATE: 2014/12/11
		COMPLETION DATE: 2014/12/12
		PAGE 1 of 1

Depth (m)	STRATIGRAPHY	SYMBOL	SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES ▼ Groundwater Potentiometric Surface on date noted	MONITORING WELL	Depth (ft)
0	GROUND SURFACE								Surface Cover: Flush Mount, 203 mm		0
	ORGANIC MATERIAL.										
	SILT - olive brown, sandy, some gravel, trace cobbles, damp.		G	-	-						
1	- trace boulders below 1.2 m.		G	-	-						5
2											
	SILT - olive gray, sandy, some gravel, trace clay, moist.		G	-	-						
3											10
	SILT - olive gray, clayey, wet.		SS	2	100		BH-308-3.0-3.7 / BTEX, PHC F1-F4, Sel-VOC, PAH, Sel-Metals				
	- sand seams.		SS	2	100						
4 ▼									2014/12/15 ▼		15
			SS	-	100						
5	CLAY - gray, some silt, wet.										
	- silt seams below 5.3 m.		SS	-	100						20
6											
			SS	-	100		BH-308-6.1-6.7 / BTEX, PHC F1-F4, Sel-VOC, PAH, Sel-Metals				
	END OF BOREHOLE at 6.7 m								Monitoring Well Installed		
7	Borehole Daylighted to 2.4 m								Well Depth 6.1 m Well Diameter 51 mm Well Material PVC Screen Type 10 Slot Screened From 3.0 m Screened To 6.1 m		25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/11	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/12	2.4 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015
8518.3 BHS.GPJ

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-309**
CLIENT: Imperial Oil		START DATE: 2014/12/11
		COMPLETION DATE: 2014/12/12
		PAGE 1 of 1

Depth (m)	STRATIGRAPHY	SYMBOL	SAMPLE TYPE	'N' VALUE	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS AND MONITORING WELL NOTES ▼ Groundwater Potentiometric Surface on date noted	MONITORING WELL	Depth (ft)
0	GROUND SURFACE								Surface Cover: Flush Mount, 203 mm		0
	ASPHALT.										
	GRAVEL - gray, sandy, trace silt, damp.		G	-	-						
1			G	-	-						5
2											
	CLAY - olive gray, silty, moist.		G	-	-						
3	CLAY - some silt, petroleum odour.		SS	-	83		BH-309-3.0-3.7 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				10
4	- mottled olive gray and dark olive brown below 4.3 m.		SS	10	79						15
5			SS	19	83				2014/12/15 ▼		
	SAND - olive gray, medium to fine grained, some gravel, trace cobbles, petroleum odour.		SS	12	75		BH-309-5.3-5.9 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				
6	- trace odour below 5.8 m.										20
	END OF BOREHOLE at 6.2 m								Monitoring Well Installed		
	Borehole Daylighted to 2.4 m								Well Depth 6.1 m Well Diameter 51 mm Well Material PVC Screen Type 10 Slot Screened From 3.0 m Screened To 6.1 m		
7											25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/11	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/12	2.4 m	203 mm	CME-75; Hollow Stem Auger	Downing George Estate Drilling Ltd	

PARSONS

PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015
8518.3 BHS.GPJ

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-310**
CLIENT: Imperial Oil		START DATE: 2014/12/12
		COMPLETION DATE: 2014/12/13
		PAGE 1 of 1

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	SAMPLE RUN	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS	BACKFILL	Depth (ft)
0	GROUND SURFACE										0
	ORGANIC MATERIAL.										
	SAND - olive brown, medium to fine grained, gravelly, some silt, damp.		G		-						
1											
	SILT - olive brown, clayey, some gravel, trace sand, moist.		G		-						5
2											
	- olive gray below 2.4 m.		G		-						
3	SILT - olive gray, some sand, trace clay, wet.		SL		-		BH-310-3.0-3.7 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				10
			SL		-						
4			SL		-						15
5			SL		-						
	CLAY - olive gray, some silt, wet.		SL		-		BH-310-5.5-6.1 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				
6	SAND - gray, trace cobbles, trace gravel, wet.		SL		-						20
	END OF BOREHOLE at 6.7 m								No Monitoring Well Installed		
7	Borehole Daylighted to 2.4 m										25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle		
2014/12/12	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM	REVIEW: HNL	DRAFTED: LLB
2014/12/13	2.4 m	203 mm	Geoprobe; Continuous Sampler	Downing George Estate Drilling Ltd			

PARSONS

8518.3 BHS.GPJ PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

BOREHOLE LOG

BOREHOLE LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	REF. NO: 10-8518.3	BOREHOLE No: **BH-311**
CLIENT: Imperial Oil		START DATE: 2014/12/12
		COMPLETION DATE: 2014/12/13
		PAGE 1 of 1

Depth (m)	DESCRIPTION: STRATIGRAPHY	SYMBOL	SAMPLING: SAMPLE TYPE	SAMPLE RUN	RECOVERY %	ZONE TESTED	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	COMMENTS	BACKFILL	Depth (ft)
0	GROUND SURFACE										0
	ORGANIC MATERIAL.										
	SILT - olive brown, sandy, some gravel, trace clay, moist.		G		-						
1	SILT - olive brown, clayey, some gravel, trace boulders, trace cobbles, trace sand, moist.		G		-						5
2			G		-						
	SILT - olive gray, some clay, moist.										
3	CLAY - olive gray, silty, wet.		SL		-		BH-311-3.0-3.7 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				10
4			SL		-						
			SL		-						15
5			SL		-						
	SAND - olive gray, medium to fine grained, some gravel, trace cobbles, wet.		SL		-		BH-311-5.5-6.1 / BTEX, PHC F1-F4, Hexane, PAH, Sel-Metals				
6			SL		-						20
	END OF BOREHOLE at 6.7 m								No Monitoring Well Installed		
7	Borehole Daylighted to 2.4 m										25
8											
9											

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: RKI Eagle
2014/12/12	0.0 m	203 mm	Vacuum Excavator; Water Lance	Veolia ES Canada Services Inc.	LOGGED: TEM / REVIEW: HNL / DRAFTED: LLB
2014/12/13	2.4 m	203 mm	Geoprobe; Continuous Sampler	Downing George Estate Drilling Ltd	

PARSONS

8518.3 BHS.GPJ PARSONS PE&I-CEG REPORT LOG 60 PE&I-CEG DATA V3-R04.GDT PE&I-CEG LIBRARY V3-R07.GLB PREPARED: 2015/01/08 Mississauga PRINTED: 01/29/2015

APPENDIX B

MOECC WELL RECORD

Ontario Ministry of the Environment

Well Record for Well Cluster - Part 1 of 3

(Only for Multiple Test Holes or Dewatering Wells)

Regulation 903 Ontario Water Resources Act

Page 1 of 1

All measurements recorded in: ☒ Metric ☐ Imperial

Follow instructions on the front and back of this form. Print or Type

Well Tag No. of Deepest Well: *(Print Well Tag No.)* A148000

Well # on Drawing of Deepest Well: 308

Well Cluster Location Information

Address of Well Location (Street Number(s)/Name(s), RR, if available)	Lot(s)	Concession(s)	Geographic Township	County/District/Upper Tier Municipality
1545 WOODROFFE AVENUE				

City, Town, Village or Hamlet	Province	GPS Unit Make	Model	Unit Mode of Operation
OTTAWA	Ontario	GARMIN	ETREX	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify:

Mandatory Attachments/Additional Information

☒ Land Owner Consent Form must be attached.

☒ Detailed Drawing of All Well Locations must be attached.

I, the person constructing the well, will promptly submit to the Director, on request, any additional information in my custody or control related to any well in the well cluster that I have constructed.

Signature of Technician/Contractor

Date (yyyy/mm/dd) 2013/03/13

Well Details

Well # on Drawing	UTM Coordinates Zone	Easting	Northing	Hole Depth (m/ft)	Hole Diameter (cm/in)	Method of Construction	Casing Material; Diameter (cm/in)	Casing (m/ft) From	Casing (m/ft) To	Screen Interval (m/ft) From	Screen Interval (m/ft) To	Annular Space Material (m/ft) From	Annular Space Material (m/ft) To	Annular Space Material:	Overburden/Bedrock or Abandonment Filing Material Intervals (m/ft)	Static Water Level (m/ft)	Date of Completion (yyyy/mm/dd)
301	18	441104	5021947	6.5	20.3	HSA	5.08	0.1	3.4	3.4	6.4	0.3	3.05	BENTONITE	ORGANIC material and SILT SAND (0.3 - 6.1)	4.95	2014/12/09
302	18	441133	5021858	6.5	20.3	HSA	5.08	0.1	3.4	3.1	6.1	0.31	3.05	BENTONITE	ORGANIC Material, SILT, SAND & SILT (0.1 - 6.1)	4.95	2014/12/09
309	18	441078	5021870	6.2	20.3	HSA	5.08	0.15	3.05	3.0	6.1	0.31	2.75	BENTONITE	ASPHALT, GRAVEL, CLAY, SAND	4.95	2014/12/12
~~311~~	~~18~~			~~6.7~~	~~20.3~~	~~HSA~~	~~5.08~~	~~0.15~~						BENTONITE	NO WELL INSTALLED		~~2014/12/13~~
303	18	441124	5021939	13.9	20.3	HSA	5.08	0.15	3.4	3.4	6.1	0.3	3.05	BENTONITE	-1.5 - 2.1 -3.5 -3.8 -5.3 -13.9 SILT, CLAY, and GRAY SAND	3.6	2014/12/10
305	18	44112	5021041	12.5	20.3	HSA	5.08	0.15	3.1	3.1	6.4	0.3	3.05	BENTONITE	-3.45 -12.5 SILT, CLAY	4.1	2014/12/11
306	18	441099	5021940	6.7	20.3	HSA	5.08	0.15	3.4	3.1	6.4	0.3	2.75	BENTONITE	0-0.3 -2.4 -5.0 -6.7 ASPHALT/GRAVEL, SAND, CLAY, SAND	5.3	2014/12/12
308	18	441068	5021041	6.7	20.3	HSA	5.08	0.15	3.0	3.0	6.1	0.3	2.75	BENTONITE	0.03 -4.6 -6.7 ORGANIC TOPSOIL, ~~SAND~~ SILT, CLAY	4.1	2014/12/12

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
GEORGE DOWNING ESTATE DRILLING	410 RUE PRINCIPALE	GREENVILLE-SUR-LA-ROUGE	QC

Postal Code	Bus. Telephone No.	Well Contractor's Licence No.	Business E-mail Address
J0V1B0	(819)242 6469	1844	dowding@hank.qc.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Signature of Well Technician	Date Submitted (yyyy/mm/dd)
BRUCE DOWNING	2173		2013/03/13

Well Owner's Copy

Date First Well in Cluster Constructed or Abandoned (yyyy/mm/dd)	Date Last Well in Cluster Completed (yyyy/mm/dd)
2014/12/09	2014/12/12

Well Abandonment

Person Abandoning the Wells:

Name N/A

(Print or Type) - See instruction 11 on the back of this form

Ministry Use Only

Date Received (yyyy/mm/dd)

Audit No. C 23847

Comments:

1991E (2011/04) © Queen's Printer for Ontario, 2011

Ontario Ministry of the Environment

Well Record for Well Cluster - Part 2 of 3
Land Owner Consent

This form is to be completed by the person who constructs or abandons test holes or dewatering wells that form all or part of a well cluster. If this form is being used to report any well abandonment, these wells must have been previously reported as part of a single well cluster.

Note: For well cluster records, only the owners of the land on which the wells are situated are to give written consent. If the well purchaser (e.g. a consultant who hires the driller) is not the owner of the land, then the well purchaser cannot sign the consent form.

By signing this form, land owners are providing consent to use one well record to report a well cluster of test holes or dewatering wells in accordance with section 16.4 of Regulation 903 made under the *Ontario Water Resources Act.*

This completed **Well Record for Well Cluster Part 2 - Land Owner Consent** must be attached to Parts 1 and 3.

* Please PRINT if completing by hand.

Well Tag Number: # A148000

"Well Record for Well Cluster" Audit Number: # C23847

Well # on Detailed Drawing	Property Location Description	Land Owner's Name	Signature of Land Owner	Date Signed *(yyyy/mm/dd)*
301, 302 303, 305 306, 308 309	1545 WOODROFFE AVENUE OTTAWA, ON	IMPERIAL OIL LTD. 1 DUNCAN MILL ROAD TORONTO, ON M3B 1Z3		2015/03/24

Well Owner's Copy

 © Queen's Printer for Ontario, 2011 Disponible en français

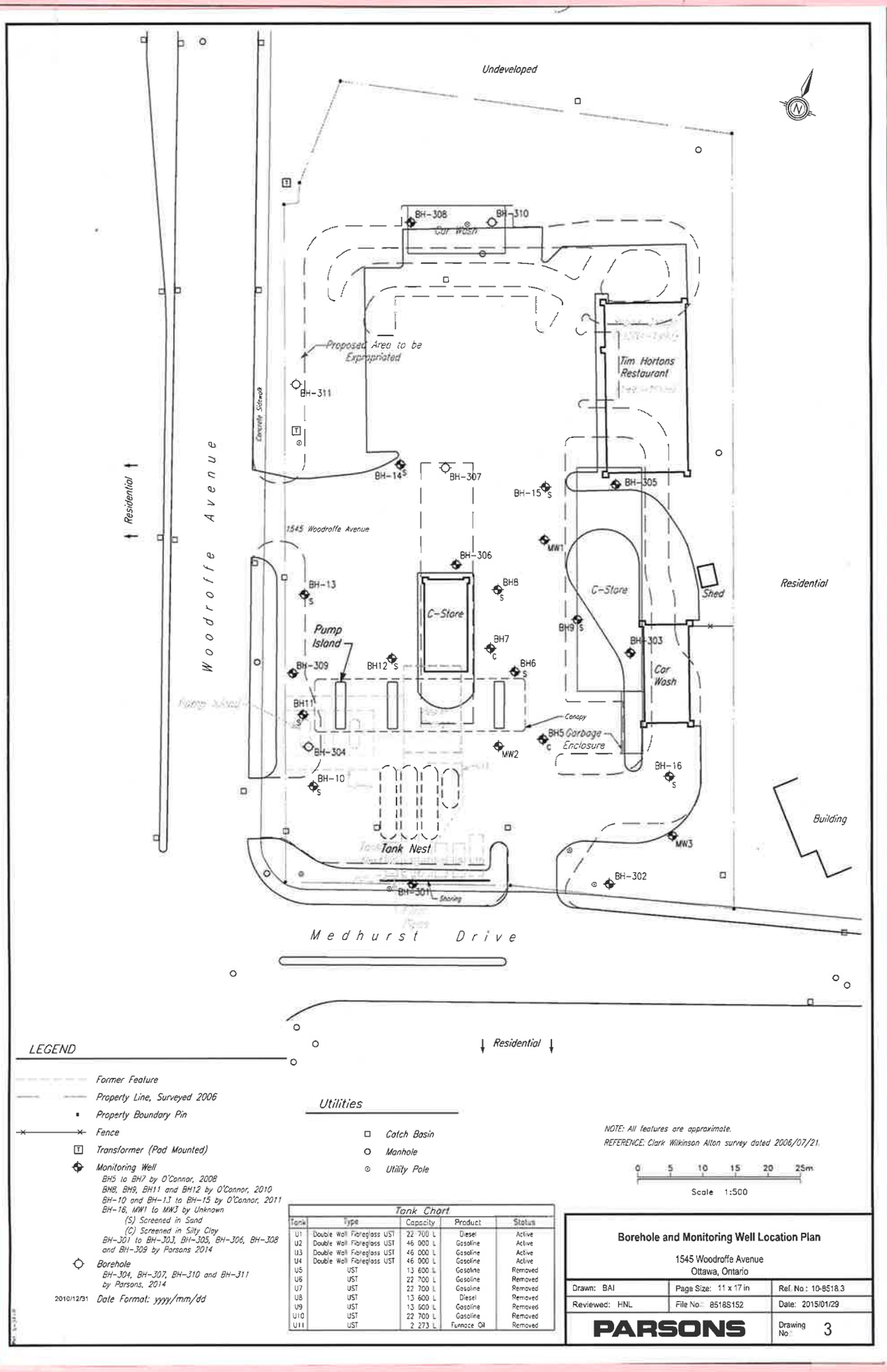
Ontario Ministry of the Environment

Well Record for Well Cluster - Part 3 of 3
Detailed Drawing of All Well Locations

Note: This **Well Record for Well Cluster Part 3 - Detailed Drawing of all Well Locations,** must be attached to Parts 1 and 2. The drawing must include all property boundaries, an arrow indicating the North direction, all named roads and sufficient measurements to locate all wells in the cluster in relation to fixed points. The drawing must show the location of each well and each well must be numbered on the drawing to match number used for that well on the **Well Record for Well Cluster Parts 1 and 2.** The well with the well tag must be clearly identified on the Drawing.
UTM coordinates should appear beside each well, if space permits. Additional comments on wells can be included on the drawing

Well Tag Number: # A148000

"Well Record for Well Cluster" Form Audit Number: # 238417



Tank Chart

Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U5	UST	13 600 L	Gasoline	Removed
U6	UST	22 700 L	Gasoline	Removed
U7	UST	22 700 L	Gasoline	Removed
U8	UST	13 600 L	Diesel	Removed
U9	UST	13 600 L	Gasoline	Removed
U10	UST	22 700 L	Gasoline	Removed
U11	UST	2 273 L	Furnace Oil	Removed

Borehole and Monitoring Well Location Plan
1545 Woodroffe Avenue
Ottawa, Ontario

Drawn: BAI	Page Size: 11 x 17 in	Ref. No.: 10-8518.3
Reviewed: HNL	File No.: 8518S152	Date: 2015/01/29
PARSONS		Drawing No.: 3

© Queen's Printer for Ontario, 2013
Well Owner's Copy
Disponible en français

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS – SOIL AND GROUNDWATER

Success Through Science®

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/22
Report #: R3267771
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N6049
Received: 2014/12/12, 14:55

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Laboratory Method	Primary Reference
Methylnaphthalene Sum	5	CAM SOP-00301	EPA 8270D m
Petroleum Hydro. CCME F1 & BTEX in Soil	5	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil	5	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	5	CAM SOP-00447	EPA 6020A m
Moisture	5	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	5	CAM SOP-00318	EPA 8270D m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-02-01

Attention:Holly Losignore

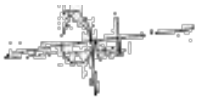
Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/22
Report #: R3267771
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N6049
Received: 2014/12/12, 14:55

Encryption Key



Patricia Legette
22 Dec 2014 11:41:42 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN SOIL (SOIL)

Maxxam ID		YV6417	YV6417	YV6418	YV6419	YV6420	YV6421		
Sampling Date		2014/12/09 12:45	2014/12/09 12:45	2014/12/09 13:30	2014/12/09 13:30	2014/12/09 14:20	2014/12/09 15:10		
COC Number		496344-02-01	496344-02-01	496344-02-01	496344-02-01	496344-02-01	496344-02-01		
	Units	**BH-301-4.0-4.4**	**BH-301-4.0-4.4 Lab-Dup**	**BH-301-5.3-5.9**	**DUP-01**	**BH-302-2.4-3.0**	**BH-302-5.3-5.9**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	3864469
Toluene	ug/g	0.027	0.026	<0.020	<0.020	<0.020	<0.020	0.020	3864469
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	3864469
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	3864469
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	3864469
Total Xylenes	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	3864469
Hexane	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	3864469
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	<10	10	3864469
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	<10	10	3864469
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	<10	10	3864687
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	<50	50	3864687
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	<50	50	3864687
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes	Yes		3864687
Extraction Surrogate Recovery (%)									
D10-Ethylbenzene	%	89	88	90	92	94	94		3864469
o-Terphenyl	%	84	87	86	96	88	84		3864687
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	100	101	100	100	101	100		3864469
4-Bromofluorobenzene	%	99	94	97	100	98	95		3864469
D4-1,2-Dichloroethane	%	102	103	103	103	103	103		3864469

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YV6417	YV6417	YV6418	YV6419	YV6420		
Sampling Date		2014/12/09 12:45	2014/12/09 12:45	2014/12/09 13:30	2014/12/09 13:30	2014/12/09 14:20		
COC Number		496344-02-01	496344-02-01	496344-02-01	496344-02-01	496344-02-01		
	Units	**BH-301-4.0-4.4**	**BH-301-4.0-4.4 Lab-Dup**	**BH-301-5.3-5.9**	**DUP-01**	**BH-302-2.4-3.0**	**RDL**	**QC Batch**
Moisture	%	9.2		15	16	31	1.0	3862366
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.0071	3857765
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Chrysene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Phenanthrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3863326
Pyrene	ug/g	0.0061	0.0092	<0.0050	<0.0050	<0.0050	0.0050	3863326
Extraction Surrogate Recovery (%)								
D10-Anthracene	%	94	93	94	95	93		3863326
D14-Terphenyl (FS)	%	85	82	85	84	84		3863326
D8-Acenaphthylene	%	80	80	83	78	81		3863326

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YV6421		
Sampling Date		2014/12/09 15:10		
COC Number		496344-02-01		
	Units	**BH-302-5.3-5.9**	**RDL**	**QC Batch**
Moisture	%	6.8	1.0	3862366
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	3857765
Acenaphthene	ug/g	<0.0050	0.0050	3863326
Acenaphthylene	ug/g	<0.0050	0.0050	3863326
Anthracene	ug/g	<0.0050	0.0050	3863326
Benzo(a)anthracene	ug/g	<0.0050	0.0050	3863326
Benzo(a)pyrene	ug/g	<0.0050	0.0050	3863326
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	3863326
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	3863326
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	3863326
Chrysene	ug/g	<0.0050	0.0050	3863326
Dibenz(a,h)anthracene	ug/g	<0.0050	0.0050	3863326
Fluoranthene	ug/g	<0.0050	0.0050	3863326
Fluorene	ug/g	<0.0050	0.0050	3863326
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	3863326
1-Methylnaphthalene	ug/g	<0.0050	0.0050	3863326
2-Methylnaphthalene	ug/g	<0.0050	0.0050	3863326
Naphthalene	ug/g	<0.0050	0.0050	3863326
Phenanthrene	ug/g	<0.0050	0.0050	3863326
Pyrene	ug/g	<0.0050	0.0050	3863326
Extraction Surrogate Recovery (%)				
D10-Anthracene	%	93		3863326
D14-Terphenyl (FS)	%	82		3863326
D8-Acenaphthylene	%	96		3863326

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		YV6417	YV6417	YV6418	YV6419	YV6420		
Sampling Date		2014/12/09 12:45	2014/12/09 12:45	2014/12/09 13:30	2014/12/09 13:30	2014/12/09 14:20		
COC Number		496344-02-01	496344-02-01	496344-02-01	496344-02-01	496344-02-01		
	Units	**BH-301-4.0-4.4**	**BH-301-4.0-4.4 Lab-Dup**	**BH-301-5.3-5.9**	**DUP-01**	**BH-302-2.4-3.0**	**RDL**	**QC Batch**
Acid Extractable Arsenic (As)	ug/g	<1.0	<1.0	<1.0	<1.0	1.1	1.0	3866057
Acid Extractable Barium (Ba)	ug/g	32	25	23	28	220	0.50	3866057
Acid Extractable Chromium (Cr)	ug/g	8.0	7.2	9.0	5.2	44	1.0	3866057
Acid Extractable Copper (Cu)	ug/g	6.3	5.9	9.7	25	21	0.50	3866057
Acid Extractable Lead (Pb)	ug/g	6.2	5.9	5.4	2.8	5.3	1.0	3866057
Acid Extractable Zinc (Zn)	ug/g	11	16	11	30	51	5.0	3866057

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		YV6421		
Sampling Date		2014/12/09 15:10		
COC Number		496344-02-01		
	Units	**BH-302-5.3-5.9**	**RDL**	**QC Batch**
Acid Extractable Arsenic (As)	ug/g	<1.0	1.0	3866057
Acid Extractable Barium (Ba)	ug/g	42	0.50	3866057
Acid Extractable Chromium (Cr)	ug/g	6.4	1.0	3866057
Acid Extractable Copper (Cu)	ug/g	9.6	0.50	3866057
Acid Extractable Lead (Pb)	ug/g	2.1	1.0	3866057
Acid Extractable Zinc (Zn)	ug/g	13	5.0	3866057

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YV6417
Sample ID: BH-301-4.0-4.4
Matrix: Soil

Collected: 2014/12/09
Relinquished: 2014/12/11
Received: 2014/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3857765	N/A	2014/12/18	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3864469	2014/12/13	2014/12/18	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3864687	2014/12/18	2014/12/18	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866057	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3862366	N/A	2014/12/16	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3863326	2014/12/17	2014/12/18	Yuan Zhou

Maxxam ID: YV6417 Dup
Sample ID: BH-301-4.0-4.4
Matrix: Soil

Collected: 2014/12/09
Relinquished: 2014/12/11
Received: 2014/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3857765	N/A	2014/12/19	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3864469	2014/12/13	2014/12/18	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3864687	2014/12/18	2014/12/18	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866057	2014/12/19	2014/12/19	Grace Bu
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3863326	2014/12/17	2014/12/18	Yuan Zhou

Maxxam ID: YV6418
Sample ID: BH-301-5.3-5.9
Matrix: Soil

Collected: 2014/12/09
Relinquished: 2014/12/11
Received: 2014/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3857765	N/A	2014/12/18	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3864469	2014/12/13	2014/12/18	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3864687	2014/12/18	2014/12/18	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866057	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3862366	N/A	2014/12/16	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3863326	2014/12/17	2014/12/18	Yuan Zhou

Maxxam ID: YV6419
Sample ID: DUP-01
Matrix: Soil

Collected: 2014/12/09
Relinquished: 2014/12/11
Received: 2014/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3857765	N/A	2014/12/18	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3864469	2014/12/13	2014/12/18	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3864687	2014/12/18	2014/12/18	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866057	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3862366	N/A	2014/12/16	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3863326	2014/12/17	2014/12/18	Yuan Zhou

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YV6420
Sample ID: BH-302-2.4-3.0
Matrix: Soil

Collected: 2014/12/09
Relinquished: 2014/12/11
Received: 2014/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3857765	N/A	2014/12/18	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3864469	2014/12/13	2014/12/18	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3864687	2014/12/18	2014/12/18	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866057	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3862366	N/A	2014/12/16	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3863326	2014/12/17	2014/12/18	Yuan Zhou

Maxxam ID: YV6421
Sample ID: BH-302-5.3-5.9
Matrix: Soil

Collected: 2014/12/09
Relinquished: 2014/12/11
Received: 2014/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3857765	N/A	2014/12/19	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3864469	2014/12/13	2014/12/18	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3864687	2014/12/18	2014/12/18	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866057	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3862366	N/A	2014/12/16	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3863326	2014/12/17	2014/12/18	Yuan Zhou

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3863326	YZ	Method Blank	D10-Anthracene	2014/12/17		93	%	50 - 130
			D14-Terphenyl (FS)	2014/12/17		85	%	50 - 130
			D8-Acenaphthylene	2014/12/17		81	%	50 - 130
			Acenaphthene	2014/12/17	<0.0050		ug/g	
			Acenaphthylene	2014/12/17	<0.0050		ug/g	
			Anthracene	2014/12/17	<0.0050		ug/g	
			Benzo(a)anthracene	2014/12/17	<0.0050		ug/g	
			Benzo(a)pyrene	2014/12/17	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2014/12/17	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2014/12/17	<0.0050		ug/g	
			Benzo(k)fluoranthene	2014/12/17	<0.0050		ug/g	
			Chrysene	2014/12/17	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2014/12/17	<0.0050		ug/g	
			Fluoranthene	2014/12/17	<0.0050		ug/g	
			Fluorene	2014/12/17	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2014/12/17	<0.0050		ug/g	
			1-Methylnaphthalene	2014/12/17	<0.0050		ug/g	
			2-Methylnaphthalene	2014/12/17	<0.0050		ug/g	
			Naphthalene	2014/12/17	<0.0050		ug/g	
			Phenanthrene	2014/12/17	<0.0050		ug/g	
			Pyrene	2014/12/17	<0.0050		ug/g	
3864469	JXI	Method Blank	1,4-Difluorobenzene	2014/12/18		96	%	60 - 140
			4-Bromofluorobenzene	2014/12/18		102	%	60 - 140
			D10-Ethylbenzene	2014/12/18		82	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/18		97	%	60 - 140
			Benzene	2014/12/18	<0.020		ug/g	
			Toluene	2014/12/18	<0.020		ug/g	
			Ethylbenzene	2014/12/18	<0.020		ug/g	
			o-Xylene	2014/12/18	<0.020		ug/g	
			p+m-Xylene	2014/12/18	<0.040		ug/g	
			Total Xylenes	2014/12/18	<0.040		ug/g	
			Hexane	2014/12/18	<0.50		ug/g	
			F1 (C6-C10)	2014/12/18	<10		ug/g	
			F1 (C6-C10) - BTEX	2014/12/18	<10		ug/g	
3864687	JKA	Method Blank	o-Terphenyl	2014/12/18		84	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/18	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2014/12/18	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2014/12/18	<50		ug/g	
3866057	GBU	Method Blank	Acid Extractable Arsenic (As)	2014/12/19	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2014/12/19	<0.50		ug/g	
			Acid Extractable Chromium (Cr)	2014/12/19	<1.0		ug/g	
			Acid Extractable Copper (Cu)	2014/12/19	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2014/12/19	<1.0		ug/g	
			Acid Extractable Zinc (Zn)	2014/12/19	<5.0		ug/g	
3863326	YZ	RPD [YV6417-02]	Acenaphthene	2014/12/18	NC		%	40
			Acenaphthylene	2014/12/18	NC		%	40
			Anthracene	2014/12/18	NC		%	40
			Benzo(a)anthracene	2014/12/18	NC		%	40
			Benzo(a)pyrene	2014/12/18	NC		%	40
			Benzo(b/j)fluoranthene	2014/12/18	NC		%	40
			Benzo(g,h,i)perylene	2014/12/18	NC		%	40

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Benzo(k)fluoranthene	2014/12/18	NC		%	40
			Chrysene	2014/12/18	NC		%	40
			Dibenz(a,h)anthracene	2014/12/18	NC		%	40
			Fluoranthene	2014/12/18	NC		%	40
			Fluorene	2014/12/18	NC		%	40
			Indeno(1,2,3-cd)pyrene	2014/12/18	NC		%	40
			1-Methylnaphthalene	2014/12/18	NC		%	40
			2-Methylnaphthalene	2014/12/18	NC		%	40
			Naphthalene	2014/12/18	NC		%	40
			Phenanthrene	2014/12/18	NC		%	40
			Pyrene	2014/12/18	NC		%	40
3864469	JXI	RPD [YV6417-05]	Benzene	2014/12/18	NC		%	50
			Toluene	2014/12/18	NC		%	50
			Ethylbenzene	2014/12/18	NC		%	50
			o-Xylene	2014/12/18	NC		%	50
			p+m-Xylene	2014/12/18	NC		%	50
			Total Xylenes	2014/12/18	NC		%	50
			Hexane	2014/12/18	NC		%	50
			F1 (C6-C10)	2014/12/18	NC		%	30
			F1 (C6-C10) - BTEX	2014/12/18	NC		%	30
3864687	JKA	RPD [YV6417-04]	F2 (C10-C16 Hydrocarbons)	2014/12/18	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/12/18	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/12/18	NC		%	30
3866057	GBU	RPD [YV6417-01]	Acid Extractable Arsenic (As)	2014/12/19	NC		%	30
			Acid Extractable Barium (Ba)	2014/12/19	22		%	30
			Acid Extractable Chromium (Cr)	2014/12/19	9.5		%	30
			Acid Extractable Copper (Cu)	2014/12/19	5.8		%	30
			Acid Extractable Lead (Pb)	2014/12/19	4.8		%	30
			Acid Extractable Zinc (Zn)	2014/12/19	NC		%	30
3863326	YZ	Matrix Spike [YV6417-02]	D10-Anthracene	2014/12/18		83	%	50 - 130
			D14-Terphenyl (FS)	2014/12/18		78	%	50 - 130
			D8-Acenaphthylene	2014/12/18		81	%	50 - 130
			Acenaphthene	2014/12/18		86	%	50 - 130
			Acenaphthylene	2014/12/18		85	%	50 - 130
			Anthracene	2014/12/18		84	%	50 - 130
			Benzo(a)anthracene	2014/12/18		87	%	50 - 130
			Benzo(a)pyrene	2014/12/18		87	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/18		90	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/18		87	%	50 - 130
			Benzo(k)fluoranthene	2014/12/18		84	%	50 - 130
			Chrysene	2014/12/18		87	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/18		86	%	50 - 130
			Fluoranthene	2014/12/18		88	%	50 - 130
			Fluorene	2014/12/18		80	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/18		88	%	50 - 130
			1-Methylnaphthalene	2014/12/18		88	%	50 - 130
			2-Methylnaphthalene	2014/12/18		85	%	50 - 130
			Naphthalene	2014/12/18		83	%	50 - 130
			Phenanthrene	2014/12/18		81	%	50 - 130
			Pyrene	2014/12/18		87	%	50 - 130
3864469	JXI	Matrix Spike [YV6417-05]	1,4-Difluorobenzene	2014/12/18		100	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			4-Bromofluorobenzene	2014/12/18		104	%	60 - 140
			D10-Ethylbenzene	2014/12/18		99	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/18		102	%	60 - 140
			Benzene	2014/12/18		94	%	60 - 140
			Toluene	2014/12/18		90	%	60 - 140
			Ethylbenzene	2014/12/18		100	%	60 - 140
			o-Xylene	2014/12/18		106	%	60 - 140
			p+m-Xylene	2014/12/18		96	%	60 - 140
			Hexane	2014/12/18		84	%	60 - 140
			F1 (C6-C10)	2014/12/18		95	%	60 - 140
3864687	JKA	Matrix Spike [YV6417-04]	o-Terphenyl	2014/12/18		86	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/18		100	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/18		99	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/18		99	%	50 - 130
3866057	GBU	Matrix Spike [YV6417-01]	Acid Extractable Arsenic (As)	2014/12/19		101	%	75 - 125
			Acid Extractable Barium (Ba)	2014/12/19		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2014/12/19		102	%	75 - 125
			Acid Extractable Copper (Cu)	2014/12/19		109	%	75 - 125
			Acid Extractable Lead (Pb)	2014/12/19		103	%	75 - 125
			Acid Extractable Zinc (Zn)	2014/12/19		110	%	75 - 125
3863326	YZ	LCS	D10-Anthracene	2014/12/17		87	%	50 - 130
			D14-Terphenyl (FS)	2014/12/17		79	%	50 - 130
			D8-Acenaphthylene	2014/12/17		82	%	50 - 130
			Acenaphthene	2014/12/17		86	%	50 - 130
			Acenaphthylene	2014/12/17		85	%	50 - 130
			Anthracene	2014/12/17		85	%	50 - 130
			Benzo(a)anthracene	2014/12/17		86	%	50 - 130
			Benzo(a)pyrene	2014/12/17		89	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/17		101	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/17		86	%	50 - 130
			Benzo(k)fluoranthene	2014/12/17		86	%	50 - 130
			Chrysene	2014/12/17		88	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/17		82	%	50 - 130
			Fluoranthene	2014/12/17		90	%	50 - 130
			Fluorene	2014/12/17		86	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/17		92	%	50 - 130
			1-Methylnaphthalene	2014/12/17		91	%	50 - 130
			2-Methylnaphthalene	2014/12/17		86	%	50 - 130
			Naphthalene	2014/12/17		87	%	50 - 130
			Phenanthrene	2014/12/17		84	%	50 - 130
			Pyrene	2014/12/17		89	%	50 - 130
3864469	JXI	LCS	1,4-Difluorobenzene	2014/12/18		98	%	60 - 140
			4-Bromofluorobenzene	2014/12/18		107	%	60 - 140
			D10-Ethylbenzene	2014/12/18		98	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/18		102	%	60 - 140
			Benzene	2014/12/18		108	%	60 - 140
			Toluene	2014/12/18		100	%	60 - 140
			Ethylbenzene	2014/12/18		107	%	60 - 140
			o-Xylene	2014/12/18		111	%	60 - 140
			p+m-Xylene	2014/12/18		104	%	60 - 140
			Hexane	2014/12/18		107	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			F1 (C6-C10)	2014/12/18		102	%	80 - 120
3864687	JKA	LCS	o-Terphenyl	2014/12/18		87	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/18		100	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2014/12/18		96	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2014/12/18		98	%	80 - 120
3866057	GBU	LCS	Acid Extractable Arsenic (As)	2014/12/19		101	%	80 - 120
			Acid Extractable Barium (Ba)	2014/12/19		107	%	80 - 120
			Acid Extractable Chromium (Cr)	2014/12/19		100	%	80 - 120
			Acid Extractable Copper (Cu)	2014/12/19		101	%	80 - 120
			Acid Extractable Lead (Pb)	2014/12/19		102	%	80 - 120
			Acid Extractable Zinc (Zn)	2014/12/19		99	%	80 - 120

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.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N6049
Report Date: 2014/12/22

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

Page 1 of 1

C of C # 496344-02-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): Edward Parker	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B(a)P	PCBs	Hexane	Metals(6) - Arsenic, barium, chromium, copper, lead, zinc
1	BH-301-4.0-4.4			✓		6	2014/12/09	12:45			✓	✓	✓										✓	✓
2	BH-301-5.3-5.9			✓		6	2014/12/09	13:30			✓	✓	✓										✓	✓
3	Dup-01			✓		6	2014/12/09	13:30			✓	✓	✓										✓	✓
4	BH-302-2.4-3.0			✓		6	2014/12/09	14:20			✓	✓	✓										✓	✓
5	BH-302-5.3-5.9			✓		6	2014/12/09	15:10			✓	✓	✓										✓	✓
6							YYYY/MM/DD	HH:MM																
7							YYYY/MM/DD	HH:MM																
8							YYYY/MM/DD	HH:MM																
9							YYYY/MM/DD	HH:MM																
10							YYYY/MM/DD	HH:MM																

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO
☐ Other 1/C/C Med/Fine

SPECIAL INSTRUCTIONS:
Test Samples as per TDG
ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	2	2	2	CUSTODY SEAL	YES	NO	TEMP		CUSTODY SEAL	YES	NO	TEMP		
PRESENT	✓			1	2	3	PRESENT			1	2	3	PRESENT			1	2	3
INTACT	✓						INTACT						INTACT					

LAB USE ONLY
MAXXAM JOB # B4N6049

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	Edward Parker printed name	2014/12/11 YYYY/MM/DD	17:30 HH:MM	1. signature	EMAD AL-KOZ printed name	2014/12/12 YYYY/MM/DD	14:55 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

SAMPLES
LABELED BY: MA
VERIFIED BY: CG2

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/09
Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*
Laboratory Job Number: *B4N6049*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

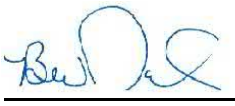
	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 
Review Date: *2015/01/07*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-18-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/23
Report #: R3269625
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N7072
Received: 2014/12/15, 14:52

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Laboratory Method	Primary Reference
Methylnaphthalene Sum	7	CAM SOP-00301	EPA 8270D m
Petroleum Hydro. CCME F1 & BTEX in Soil	7	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil	7	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	7	CAM SOP-00447	EPA 6020A m
Moisture	7	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	7	CAM SOP-00318	EPA 8270D m
Polychlorinated Biphenyl in Soil	2	CAM SOP-00309	EPA 8082 m
Volatile Organic Compounds in Soil	4	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-18-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/23
Report #: R3269625
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N7072
Received: 2014/12/15, 14:52

Encryption Key Kudrat Bajwa
Kudrat Bajwa
23 Dec 2014 10:46:58 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN SOIL (SOIL)

Maxxam ID		YW2041	YW2042	YW2043	YW2044	YW2045	YW2046		
Sampling Date		2014/12/10 15:35	2014/12/10 16:00	2014/12/10 17:20	2014/12/10 17:55	2014/12/10 18:55	2014/12/10 19:40		
COC Number		496344-18-01	496344-18-01	496344-18-01	496344-18-01	496344-18-01	496344-18-01		
	Units	**BH-303-3.0-3.7**	**BH-303-5.3-5.9**	**BH-304-3.0-3.7**	**BH-304-5.3-5.9**	**DUP-02**	**BH-305-3.8-4.4**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	3866178
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	3866178
Ethylbenzene	ug/g	<0.020	<0.020	0.76	0.15	0.048	<0.020	0.020	3866178
o-Xylene	ug/g	<0.020	<0.020	0.085	<0.020	<0.020	<0.020	0.020	3866178
p+m-Xylene	ug/g	<0.040	<0.040	1.5	0.12	0.11	<0.040	0.040	3866178
Total Xylenes	ug/g	<0.040	<0.040	1.6	0.12	0.11	<0.040	0.040	3866178
Hexane	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	3866178
F1 (C6-C10)	ug/g	<10	<10	43	<10	<10	<10	10	3866178
F1 (C6-C10) - BTEX	ug/g	<10	<10	41	<10	<10	<10	10	3866178
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	<10	10	3867367
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	<50	50	3867367
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	<50	50	3867367
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes	Yes		3867367
Extraction Surrogate Recovery (%)									
D10-Ethylbenzene	%	78	98	92	102	90	85		3866178
o-Terphenyl	%	99	98	101	113	122	101		3867367
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	103	102	100	101	101	104		3866178
4-Bromofluorobenzene	%	92	95	110	106	105	91		3866178
D4-1,2-Dichloroethane	%	101	98	96	98	98	101		3866178

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN SOIL (SOIL)

Maxxam ID		YW2047	YW2047		
Sampling Date		2014/12/10 20:25	2014/12/10 20:25		
COC Number		496344-18-01	496344-18-01		
	Units	**BH-305-5.3-5.9**	**BH-305-5.3-5.9 Lab-Dup**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	<0.020	0.020	3866178
Toluene	ug/g	<0.020	<0.020	0.020	3866178
Ethylbenzene	ug/g	<0.020	<0.020	0.020	3866178
o-Xylene	ug/g	<0.020	<0.020	0.020	3866178
p+m-Xylene	ug/g	<0.040	<0.040	0.040	3866178
Total Xylenes	ug/g	<0.040	<0.040	0.040	3866178
Hexane	ug/g	<0.50	<0.50	0.50	3866178
F1 (C6-C10)	ug/g	<10	<10	10	3866178
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	3866178
F2 (C10-C16 Hydrocarbons)	ug/g	<10		10	3867367
F3 (C16-C34 Hydrocarbons)	ug/g	<50		50	3867367
F4 (C34-C50 Hydrocarbons)	ug/g	<50		50	3867367
Reached Baseline at C50	ug/g	Yes			3867367
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	92	83		3866178
o-Terphenyl	%	98			3867367
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	103		3866178
4-Bromofluorobenzene	%	94	100		3866178
D4-1,2-Dichloroethane	%	97	100		3866178

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YW2041	YW2041		YW2042	YW2043	YW2044		
Sampling Date		2014/12/10 15:35	2014/12/10 15:35		2014/12/10 16:00	2014/12/10 17:20	2014/12/10 17:55		
COC Number		496344-18-01	496344-18-01		496344-18-01	496344-18-01	496344-18-01		
	Units	**BH-303-3.0-3.7**	**BH-303-3.0-3.7 Lab-Dup**	**QC Batch**	**BH-303-5.3-5.9**	**BH-304-3.0-3.7**	**BH-304-5.3-5.9**	**RDL**	**QC Batch**
Moisture	%	13	13	3862995	28	26	17	1.0	3865050
Methylnaphthalene, 2-(1-)	ug/g	<0.0071		3859839	<0.0071	0.077	0.056	0.0071	3859839
Acenaphthene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Acenaphthylene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Anthracene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(a)anthracene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(a)pyrene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(b/j)fluoranthene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(g,h,i)perylene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(k)fluoranthene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Chrysene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Dibenz(a,h)anthracene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Fluoranthene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Fluorene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
1-Methylnaphthalene	ug/g	<0.0050		3865019	<0.0050	0.036	0.035	0.0050	3865019
2-Methylnaphthalene	ug/g	<0.0050		3865019	<0.0050	0.041	0.020	0.0050	3865019
Naphthalene	ug/g	<0.0050		3865019	<0.0050	0.029	0.0056	0.0050	3865019
Phenanthrene	ug/g	<0.0050		3865019	<0.0050	<0.0050	0.0079	0.0050	3865019
Pyrene	ug/g	<0.0050		3865019	<0.0050	<0.0050	<0.0050	0.0050	3865019
Extraction Surrogate Recovery (%)									
D10-Anthracene	%	89		3865019	89	86	91		3865019
D14-Terphenyl (FS)	%	93		3865019	96	92	97		3865019
D8-Acenaphthylene	%	81		3865019	82	84	87		3865019

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YW2044	YW2045	YW2046	YW2047		
Sampling Date		2014/12/10 17:55	2014/12/10 18:55	2014/12/10 19:40	2014/12/10 20:25		
COC Number		496344-18-01	496344-18-01	496344-18-01	496344-18-01		
	Units	**BH-304-5.3-5.9 Lab-Dup**	**DUP-02**	**BH-305-3.8-4.4**	**BH-305-5.3-5.9**	**RDL**	**QC Batch**
Moisture	%	16	18	34	30	1.0	3865050
Methylnaphthalene, 2-(1-)	ug/g		0.033	<0.0071	<0.0071	0.0071	3859839
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Chrysene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
1-Methylnaphthalene	ug/g	0.041	0.023	<0.0050	<0.0050	0.0050	3865019
2-Methylnaphthalene	ug/g	0.029	0.010	<0.0050	<0.0050	0.0050	3865019
Naphthalene	ug/g	0.0068	<0.0050	<0.0050	<0.0050	0.0050	3865019
Phenanthrene	ug/g	0.0079	0.0063	<0.0050	<0.0050	0.0050	3865019
Pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Extraction Surrogate Recovery (%)							
D10-Anthracene	%	89	88	86	88		3865019
D14-Terphenyl (FS)	%	94	91	94	94		3865019
D8-Acenaphthylene	%	86	83	82	83		3865019

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PCBS (SOIL)

Maxxam ID		YW2046	YW2046	YW2047		
Sampling Date		2014/12/10 19:40	2014/12/10 19:40	2014/12/10 20:25		
COC Number		496344-18-01	496344-18-01	496344-18-01		
	Units	**BH-305-3.8-4.4**	**BH-305-3.8-4.4 Lab-Dup**	**BH-305-5.3-5.9**	**RDL**	**QC Batch**
Total PCB	ug/g	<0.020	<0.020	<0.020	0.020	3864616
Extraction Surrogate Recovery (%)						
Decachlorobiphenyl	%	92	97	92		3864616

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		YW2041	YW2042	YW2043	YW2043	YW2044		
Sampling Date		2014/12/10 15:35	2014/12/10 16:00	2014/12/10 17:20	2014/12/10 17:20	2014/12/10 17:55		
COC Number		496344-18-01	496344-18-01	496344-18-01	496344-18-01	496344-18-01		
	Units	**BH-303-3.0-3.7**	**BH-303-5.3-5.9**	**BH-304-3.0-3.7**	**BH-304-3.0-3.7 Lab-Dup**	**BH-304-5.3-5.9**	**RDL**	**QC Batch**
Acid Extractable Arsenic (As)	ug/g	<1.0	1.0	<1.0	<1.0	<1.0	1.0	3866241
Acid Extractable Barium (Ba)	ug/g	150	280	200	200	33	0.50	3866241
Acid Extractable Chromium (Cr)	ug/g	35	58	44	46	9.1	1.0	3866241
Acid Extractable Copper (Cu)	ug/g	18	27	21	23	11	0.50	3866241
Acid Extractable Lead (Pb)	ug/g	4.4	5.2	4.4	4.5	2.3	1.0	3866241
Acid Extractable Zinc (Zn)	ug/g	47	69	54	53	12	5.0	3866241

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		YW2045	YW2046	YW2047		
Sampling Date		2014/12/10 18:55	2014/12/10 19:40	2014/12/10 20:25		
COC Number		496344-18-01	496344-18-01	496344-18-01		
	Units	**DUP-02**	**BH-305-3.8-4.4**	**BH-305-5.3-5.9**	**RDL**	**QC Batch**
Acid Extractable Arsenic (As)	ug/g	<1.0	<1.0	1.0	1.0	3866241
Acid Extractable Barium (Ba)	ug/g	26	66	120	0.50	3866241
Acid Extractable Chromium (Cr)	ug/g	11	22	39	1.0	3866241
Acid Extractable Copper (Cu)	ug/g	14	13	19	0.50	3866241
Acid Extractable Lead (Pb)	ug/g	3.5	2.4	3.8	1.0	3866241
Acid Extractable Zinc (Zn)	ug/g	15	26	46	5.0	3866241

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		YW2041	YW2041	YW2042	YW2046	YW2047		
Sampling Date		2014/12/10 15:35	2014/12/10 15:35	2014/12/10 16:00	2014/12/10 19:40	2014/12/10 20:25		
COC Number		496344-18-01	496344-18-01	496344-18-01	496344-18-01	496344-18-01		
	Units	**BH-303-3.0-3.7**	**BH-303-3.0-3.7 Lab-Dup**	**BH-303-5.3-5.9**	**BH-305-3.8-4.4**	**BH-305-5.3-5.9**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug/g				<0.050	<0.050	0.050	3861394
1,1-Dichloroethane	ug/g				<0.050	<0.050	0.050	3861394
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	3861394
1,1-Dichloroethylene	ug/g				<0.050	<0.050	0.050	3861394
cis-1,2-Dichloroethylene	ug/g				<0.050	<0.050	0.050	3861394
trans-1,2-Dichloroethylene	ug/g				<0.050	<0.050	0.050	3861394
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	3861394
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	3861394
Tetrachloroethylene	ug/g				<0.050	<0.050	0.050	3861394
1,1,1-Trichloroethane	ug/g				<0.050	<0.050	0.050	3861394
1,1,2-Trichloroethane	ug/g				<0.050	<0.050	0.050	3861394
Trichloroethylene	ug/g				<0.050	<0.050	0.050	3861394
Vinyl Chloride	ug/g				<0.020	<0.020	0.020	3861394
Trichlorofluoromethane (FREON 11)	ug/g				<0.050	<0.050	0.050	3861394
Extraction Surrogate Recovery (%)								
D10-o-Xylene	%	89	89	119	107	95		3861394
Instrument Surrogate Recovery (%)								
4-Bromofluorobenzene	%	82	83	97	75	84		3861394
D4-1,2-Dichloroethane	%	98	100	99	99	102		3861394
D8-Toluene	%	103	103	101	104	102		3861394

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YW2041
Sample ID: BH-303-3.0-3.7
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3859839	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3867367	2014/12/20	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3862995	N/A	2014/12/17	Jessy Mathew Vinod
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou
Volatile Organic Compounds in Soil	P&T/MS	3861394	2014/12/16	2014/12/17	Karen Huynh

Maxxam ID: YW2041 Dup
Sample ID: BH-303-3.0-3.7
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	3862995	N/A	2014/12/17	Jessy Mathew Vinod
Volatile Organic Compounds in Soil	P&T/MS	3861394	2014/12/16	2014/12/17	Karen Huynh

Maxxam ID: YW2042
Sample ID: BH-303-5.3-5.9
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3859839	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3867367	2014/12/20	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou
Volatile Organic Compounds in Soil	P&T/MS	3861394	2014/12/16	2014/12/17	Karen Huynh

Maxxam ID: YW2043
Sample ID: BH-304-3.0-3.7
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3859839	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3867367	2014/12/20	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YW2043 Dup
Sample ID: BH-304-3.0-3.7
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu

Maxxam ID: YW2044
Sample ID: BH-304-5.3-5.9
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3859839	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3867367	2014/12/20	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam ID: YW2044 Dup
Sample ID: BH-304-5.3-5.9
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam ID: YW2045
Sample ID: DUP-02
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3859839	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3867367	2014/12/20	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam ID: YW2046
Sample ID: BH-305-3.8-4.4
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3859839	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3867367	2014/12/20	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YW2046
Sample ID: BH-305-3.8-4.4
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou
Polychlorinated Biphenyl in Soil	GC/ECD	3864616	2014/12/18	2014/12/18	Li Peng
Volatile Organic Compounds in Soil	P&T/MS	3861394	2014/12/16	2014/12/17	Karen Huynh

Maxxam ID: YW2046 Dup
Sample ID: BH-305-3.8-4.4
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Polychlorinated Biphenyl in Soil	GC/ECD	3864616	2014/12/18	2014/12/18	Li Peng

Maxxam ID: YW2047
Sample ID: BH-305-5.3-5.9
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3859839	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3867367	2014/12/20	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou
Polychlorinated Biphenyl in Soil	GC/ECD	3864616	2014/12/18	2014/12/18	Li Peng
Volatile Organic Compounds in Soil	P&T/MS	3861394	2014/12/16	2014/12/17	Karen Huynh

Maxxam ID: YW2047 Dup
Sample ID: BH-305-5.3-5.9
Matrix: Soil

Collected: 2014/12/10
Relinquished: 2014/12/11
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/22	Simon Xi

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C

Sample YW2046-01 : PCB Analysis: Detection limits were adjusted for high moisture content.

Sample YW2047-01 : PCB Analysis: Detection limits were adjusted for high moisture content.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3861394	KH1	Method Blank	4-Bromofluorobenzene	2014/12/17		85	%	60 - 140
			D10-o-Xylene	2014/12/17		96	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/17		98	%	60 - 140
			D8-Toluene	2014/12/17		102	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2014/12/17	<0.050		ug/g	
			1,1-Dichloroethane	2014/12/17	<0.050		ug/g	
			1,2-Dichloroethane	2014/12/17	<0.050		ug/g	
			1,1-Dichloroethylene	2014/12/17	<0.050		ug/g	
			cis-1,2-Dichloroethylene	2014/12/17	<0.050		ug/g	
			trans-1,2-Dichloroethylene	2014/12/17	<0.050		ug/g	
			Ethylene Dibromide	2014/12/17	<0.050		ug/g	
			Methyl t-butyl ether (MTBE)	2014/12/17	<0.050		ug/g	
			Tetrachloroethylene	2014/12/17	<0.050		ug/g	
			1,1,1-Trichloroethane	2014/12/17	<0.050		ug/g	
			1,1,2-Trichloroethane	2014/12/17	<0.050		ug/g	
			Trichloroethylene	2014/12/17	<0.050		ug/g	
			Vinyl Chloride	2014/12/17	<0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2014/12/17	<0.050		ug/g	
3864616	LPG	Method Blank	Decachlorobiphenyl	2014/12/18		91	%	60 - 130
			Total PCB	2014/12/18	<0.010		ug/g	
3865019	YZ	Method Blank	D10-Anthracene	2014/12/19		89	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		92	%	50 - 130
			D8-Acenaphthylene	2014/12/19		86	%	50 - 130
			Acenaphthene	2014/12/19	<0.0050		ug/g	
			Acenaphthylene	2014/12/19	<0.0050		ug/g	
			Anthracene	2014/12/19	<0.0050		ug/g	
			Benzo(a)anthracene	2014/12/19	<0.0050		ug/g	
			Benzo(a)pyrene	2014/12/19	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2014/12/19	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2014/12/19	<0.0050		ug/g	
			Benzo(k)fluoranthene	2014/12/19	<0.0050		ug/g	
			Chrysene	2014/12/19	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2014/12/19	<0.0050		ug/g	
			Fluoranthene	2014/12/19	<0.0050		ug/g	
			Fluorene	2014/12/19	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2014/12/19	<0.0050		ug/g	
			1-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			2-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			Naphthalene	2014/12/19	<0.0050		ug/g	
			Phenanthrene	2014/12/19	<0.0050		ug/g	
			Pyrene	2014/12/19	<0.0050		ug/g	
3866178	JXI	Method Blank	1,4-Difluorobenzene	2014/12/19		101	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		100	%	60 - 140
			D10-Ethylbenzene	2014/12/19		90	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		97	%	60 - 140
			Benzene	2014/12/19	<0.020		ug/g	
			Toluene	2014/12/19	<0.020		ug/g	
			Ethylbenzene	2014/12/19	<0.020		ug/g	
			o-Xylene	2014/12/19	<0.020		ug/g	
			p+m-Xylene	2014/12/19	<0.040		ug/g	
			Total Xylenes	2014/12/19	<0.040		ug/g	

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Hexane	2014/12/19	<0.50		ug/g	
			F1 (C6-C10)	2014/12/19	<10		ug/g	
			F1 (C6-C10) - BTEX	2014/12/19	<10		ug/g	
3866241	GBU	Method Blank	Acid Extractable Arsenic (As)	2014/12/19	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2014/12/19	<0.50		ug/g	
			Acid Extractable Chromium (Cr)	2014/12/19	<1.0		ug/g	
			Acid Extractable Copper (Cu)	2014/12/19	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2014/12/19	<1.0		ug/g	
			Acid Extractable Zinc (Zn)	2014/12/19	<5.0		ug/g	
3867367	JKA	Method Blank	o-Terphenyl	2014/12/20		99	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/20	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2014/12/20	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2014/12/20	<50		ug/g	
3861394	KH1	RPD [YW2041-05]	1,2-Dichloroethane	2014/12/17	NC		%	50
			Ethylene Dibromide	2014/12/17	NC		%	50
			Methyl t-butyl ether (MTBE)	2014/12/17	NC		%	50
3862995	MYG	RPD [YW2041-02]	Moisture	2014/12/17	1.6		%	20
3866241	GBU	RPD [YW2043-01]	Acid Extractable Arsenic (As)	2014/12/19	NC		%	30
			Acid Extractable Barium (Ba)	2014/12/19	0.31		%	30
			Acid Extractable Chromium (Cr)	2014/12/19	4.5		%	30
			Acid Extractable Copper (Cu)	2014/12/19	7.2		%	30
			Acid Extractable Lead (Pb)	2014/12/19	NC		%	30
			Acid Extractable Zinc (Zn)	2014/12/19	2.5		%	30
3865019	YZ	RPD [YW2044-02]	Acenaphthene	2014/12/19	NC		%	40
			Acenaphthylene	2014/12/19	NC		%	40
			Anthracene	2014/12/19	NC		%	40
			Benzo(a)anthracene	2014/12/19	NC		%	40
			Benzo(a)pyrene	2014/12/19	NC		%	40
			Benzo(b/j)fluoranthene	2014/12/19	NC		%	40
			Benzo(g,h,i)perylene	2014/12/19	NC		%	40
			Benzo(k)fluoranthene	2014/12/19	NC		%	40
			Chrysene	2014/12/19	NC		%	40
			Dibenz(a,h)anthracene	2014/12/19	NC		%	40
			Fluoranthene	2014/12/19	NC		%	40
			Fluorene	2014/12/19	NC		%	40
			Indeno(1,2,3-cd)pyrene	2014/12/19	NC		%	40
			1-Methylnaphthalene	2014/12/19	14		%	40
			2-Methylnaphthalene	2014/12/19	NC		%	40
			Naphthalene	2014/12/19	NC		%	40
			Phenanthrene	2014/12/19	NC		%	40
			Pyrene	2014/12/19	NC		%	40
3865050	DEE	RPD [YW2044-02]	Moisture	2014/12/18	3.1		%	20
3864616	LPG	RPD [YW2046-02]	Total PCB	2014/12/18	NC		%	50
3866178	JXI	RPD [YW2047-04]	Benzene	2014/12/22	NC		%	50
			Toluene	2014/12/22	NC		%	50
			Ethylbenzene	2014/12/22	NC		%	50
			o-Xylene	2014/12/22	NC		%	50
			p+m-Xylene	2014/12/22	NC		%	50
			Total Xylenes	2014/12/22	NC		%	50
			Hexane	2014/12/22	NC		%	50
			F1 (C6-C10)	2014/12/22	NC		%	30

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			F1 (C6-C10) - BTEX	2014/12/22	NC		%	30
3861394	KH1	Matrix Spike [YW2041-05]	4-Bromofluorobenzene	2014/12/17		106	%	60 - 140
			D10-o-Xylene	2014/12/17		101	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/17		96	%	60 - 140
			D8-Toluene	2014/12/17		100	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2014/12/17		106	%	60 - 140
			1,1-Dichloroethane	2014/12/17		107	%	60 - 140
			1,2-Dichloroethane	2014/12/17		101	%	60 - 140
			1,1-Dichloroethylene	2014/12/17		117	%	60 - 140
			cis-1,2-Dichloroethylene	2014/12/17		103	%	60 - 140
			trans-1,2-Dichloroethylene	2014/12/17		107	%	60 - 140
			Ethylene Dibromide	2014/12/17		98	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/12/17		100	%	60 - 140
			Tetrachloroethylene	2014/12/17		105	%	60 - 140
			1,1,1-Trichloroethane	2014/12/17		107	%	60 - 140
			1,1,2-Trichloroethane	2014/12/17		96	%	60 - 140
			Trichloroethylene	2014/12/17		104	%	60 - 140
			Vinyl Chloride	2014/12/17		107	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2014/12/17		110	%	60 - 140
3864616	LPG	Matrix Spike [YW2046-02]	Decachlorobiphenyl	2014/12/18		101	%	60 - 130
			Total PCB	2014/12/18		108	%	60 - 130
3865019	YZ	Matrix Spike [YW2044-02]	D10-Anthracene	2014/12/19		87	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		94	%	50 - 130
			D8-Acenaphthylene	2014/12/19		84	%	50 - 130
			Acenaphthene	2014/12/19		87	%	50 - 130
			Acenaphthylene	2014/12/19		84	%	50 - 130
			Anthracene	2014/12/19		86	%	50 - 130
			Benzo(a)anthracene	2014/12/19		87	%	50 - 130
			Benzo(a)pyrene	2014/12/19		88	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/19		88	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/19		85	%	50 - 130
			Benzo(k)fluoranthene	2014/12/19		89	%	50 - 130
			Chrysene	2014/12/19		87	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/19		85	%	50 - 130
			Fluoranthene	2014/12/19		92	%	50 - 130
			Fluorene	2014/12/19		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/19		94	%	50 - 130
			1-Methylnaphthalene	2014/12/19		92	%	50 - 130
			2-Methylnaphthalene	2014/12/19		90	%	50 - 130
			Naphthalene	2014/12/19		79	%	50 - 130
			Phenanthrene	2014/12/19		81	%	50 - 130
			Pyrene	2014/12/19		91	%	50 - 130
3866178	JXI	Matrix Spike [YW2047-04]	1,4-Difluorobenzene	2014/12/19		100	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		105	%	60 - 140
			D10-Ethylbenzene	2014/12/19		87	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		99	%	60 - 140
			Benzene	2014/12/19		72	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Toluene	2014/12/19		69	%	60 - 140
			Ethylbenzene	2014/12/19		77	%	60 - 140
			o-Xylene	2014/12/19		83	%	60 - 140
			p+m-Xylene	2014/12/19		75	%	60 - 140
			Hexane	2014/12/19		69	%	60 - 140
			F1 (C6-C10)	2014/12/19		62	%	60 - 140
3866241	GBU	Matrix Spike [YW2043-01]	Acid Extractable Arsenic (As)	2014/12/19		100	%	75 - 125
			Acid Extractable Barium (Ba)	2014/12/19		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2014/12/19		NC	%	75 - 125
			Acid Extractable Copper (Cu)	2014/12/19		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2014/12/19		101	%	75 - 125
			Acid Extractable Zinc (Zn)	2014/12/19		NC	%	75 - 125
3861394	KH1	LCS	4-Bromofluorobenzene	2014/12/17		105	%	60 - 140
			D10-o-Xylene	2014/12/17		107	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/17		97	%	60 - 140
			D8-Toluene	2014/12/17		100	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2014/12/17		101	%	60 - 140
			1,1-Dichloroethane	2014/12/17		106	%	60 - 130
			1,2-Dichloroethane	2014/12/17		103	%	60 - 130
			1,1-Dichloroethylene	2014/12/17		114	%	60 - 130
			cis-1,2-Dichloroethylene	2014/12/17		103	%	60 - 130
			trans-1,2-Dichloroethylene	2014/12/17		106	%	60 - 130
			Ethylene Dibromide	2014/12/17		101	%	60 - 130
			Methyl t-butyl ether (MTBE)	2014/12/17		104	%	60 - 130
			Tetrachloroethylene	2014/12/17		101	%	60 - 130
			1,1,1-Trichloroethane	2014/12/17		106	%	60 - 130
			1,1,2-Trichloroethane	2014/12/17		98	%	60 - 130
			Trichloroethylene	2014/12/17		102	%	60 - 130
			Vinyl Chloride	2014/12/17		104	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2014/12/17		107	%	60 - 130
3864616	LPG	LCS	Decachlorobiphenyl	2014/12/18		91	%	60 - 130
			Total PCB	2014/12/18		103	%	60 - 130
3865019	YZ	LCS	D10-Anthracene	2014/12/19		87	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		93	%	50 - 130
			D8-Acenaphthylene	2014/12/19		84	%	50 - 130
			Acenaphthene	2014/12/19		89	%	50 - 130
			Acenaphthylene	2014/12/19		85	%	50 - 130
			Anthracene	2014/12/19		88	%	50 - 130
			Benzo(a)anthracene	2014/12/19		82	%	50 - 130
			Benzo(a)pyrene	2014/12/19		89	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/19		88	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/19		88	%	50 - 130
			Benzo(k)fluoranthene	2014/12/19		90	%	50 - 130
			Chrysene	2014/12/19		88	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/19		89	%	50 - 130
			Fluoranthene	2014/12/19		91	%	50 - 130
			Fluorene	2014/12/19		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/19		96	%	50 - 130
			1-Methylnaphthalene	2014/12/19		93	%	50 - 130
			2-Methylnaphthalene	2014/12/19		91	%	50 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Naphthalene	2014/12/19		82	%	50 - 130
			Phenanthrene	2014/12/19		84	%	50 - 130
			Pyrene	2014/12/19		91	%	50 - 130
3866178	JXI	LCS	1,4-Difluorobenzene	2014/12/19		100	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		107	%	60 - 140
			D10-Ethylbenzene	2014/12/19		102	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		99	%	60 - 140
			Benzene	2014/12/19		113	%	60 - 140
			Toluene	2014/12/19		106	%	60 - 140
			Ethylbenzene	2014/12/19		115	%	60 - 140
			o-Xylene	2014/12/19		119	%	60 - 140
			p+m-Xylene	2014/12/19		112	%	60 - 140
			Hexane	2014/12/19		111	%	60 - 140
			F1 (C6-C10)	2014/12/19		98	%	80 - 120
3866241	GBU	LCS	Acid Extractable Arsenic (As)	2014/12/19		103	%	80 - 120
			Acid Extractable Barium (Ba)	2014/12/19		103	%	80 - 120
			Acid Extractable Chromium (Cr)	2014/12/19		102	%	80 - 120
			Acid Extractable Copper (Cu)	2014/12/19		103	%	80 - 120
			Acid Extractable Lead (Pb)	2014/12/19		101	%	80 - 120
			Acid Extractable Zinc (Zn)	2014/12/19		104	%	80 - 120
3867367	JKA	LCS	o-Terphenyl	2014/12/20		98	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/20		101	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2014/12/20		104	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2014/12/20		109	%	80 - 120

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.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

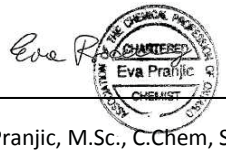
Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7072
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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



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

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496344-18-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name:Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name:Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): Edward Parker	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B(a)P	PCBs	Metals (6) - Arsenic, Barium, Chromium, Copper, Lead, Zinc	Hexane	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE	VOC (14): ethylene dibromide, 1,2-dichloroethane, 1,1-dichloroethane, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, vinyl chloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, MTBE, Freon-11, Freon-12				
1	BH-303-3.0-3.7			✓		8	2014/12/10	15:35			✓	✓	✓	VOC, EC									✓	✓	✓							
2	BH-303-5.3-5.9			✓		8	2014/12/10	16:00			✓	✓	✓	VOC, EC									✓	✓	✓							
3	BH-304-3.0-3.7			✓		6	2014/12/10	17:20			✓	✓	✓	VOC, EC									✓	✓								
4	BH-304-5.3-5.9			✓		6	2014/12/10	17:55			✓	✓	✓	VOC, EC									✓	✓								
5	Dup-02			✓		6	2014/12/10	18:55			✓	✓	✓	VOC, EC									✓	✓								
6	BH-305-3.8-4.4			✓		9	2014/12/10	19:40			✓	✓	✓	VOC, EC								✓	✓	✓			✓					
7	BH-305-5.3-5.9			✓		9	2014/12/10	20:25			✓	✓	✓	VOC, EC								✓	✓	✓			✓					
8							YYYY/MM/DD	HH:MM																									
9							YYYY/MM/DD	HH:MM																									
10							YYYY/MM/DD	HH:MM																									

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO
☐ Other _____ 1/C/C Med/Fine

SPECIAL INSTRUCTIONS: Test Samples as per TDG

ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: Ø

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID:						COOLER ID:						COOLER ID:					
CUSTODY SEAL PRESENT INTACT	YES	NO	TEMP	1: 2	2: 2	3: 1	CUSTODY SEAL PRESENT INTACT	YES	NO	TEMP 1	2	3	CUSTODY SEAL PRESENT INTACT	YES	NO	TEMP 1	2	3
	✓																	

LAB USE ONLY
MAXXAM JOB # B4N7072
SAMPLES
LABELED BY: ABH
VERIFIED BY: FW

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	Edward Parker printed name	2014/12/11 YYYY/MM/DD	17:30 HH:MM	1. signature	MARK FLEMER printed name	2014/12/15 YYYY/MM/DD	14:52 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/10
Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*
Laboratory Job Number: *B4N7072*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

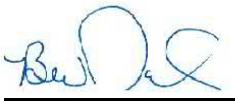
	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 
Review Date: *2015/01/07*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-15-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/23
Report #: R3269782
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N7299
Received: 2014/12/15, 14:52

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Laboratory Method	Primary Reference
Methylnaphthalene Sum	5	CAM SOP-00301	EPA 8270D m
Petroleum Hydro. CCME F1 & BTEX in Soil	5	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil	5	CAM SOP-00316	CCME CWS m
Acid Extractable Metals Analysis by ICP	5	CAM SOP-00408	EPA 6010C m
Moisture	5	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	5	CAM SOP-00318	EPA 8270D m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-15-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/23
Report #: R3269782
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N7299
Received: 2014/12/15, 14:52

Encryption Key Kudrat Bajwa
Kudrat Bajwa
23 Dec 2014 13:13:29 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

LEAD IN SOIL (SOIL)

Maxxam ID		YW3227	YW3228	YW3229	YW3230	YW3231		
Sampling Date		2014/12/11 13:00	2014/12/11 13:50	2014/12/11 13:50	2014/12/11 15:20	2014/12/11 16:00		
COC Number		496344-15-01	496344-15-01	496344-15-01	496344-15-01	496344-15-01		
	Units	**BH-306-3.0-3.7**	**BH-306-5.3-5.9**	**DUP-03**	**BH-307-3.8-4.4**	**BH-307-6.1-6.7**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	<5.0	<5.0	<5.0	5.4	8.5	5.0	3866097

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN SOIL (SOIL)

Maxxam ID		YW3227	YW3227	YW3228	YW3229	YW3230	YW3231		
Sampling Date		2014/12/11 13:00	2014/12/11 13:00	2014/12/11 13:50	2014/12/11 13:50	2014/12/11 15:20	2014/12/11 16:00		
COC Number		496344-15-01	496344-15-01	496344-15-01	496344-15-01	496344-15-01	496344-15-01		
	Units	**BH-306-3.0-3.7**	**BH-306-3.0-3.7 Lab-Dup**	**BH-306-5.3-5.9**	**DUP-03**	**BH-307-3.8-4.4**	**BH-307-6.1-6.7**	**RDL**	**QC Batch**
Moisture	%	25		16	15	27	14	1.0	3865259
Benzene	ug/g	<0.020	<0.020	0.030	0.037	<0.020	<0.020	0.020	3866048
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	3866048
Ethylbenzene	ug/g	<0.020	<0.020	0.12	0.16	<0.020	0.054	0.020	3866048
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	3866048
p+m-Xylene	ug/g	<0.040	<0.040	0.12	0.16	<0.040	<0.040	0.040	3866048
Total Xylenes	ug/g	<0.040	<0.040	0.12	0.16	<0.040	<0.040	0.040	3866048
Hexane	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	3866048
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	<10	10	3866048
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	<10	10	3866048
F2 (C10-C16 Hydrocarbons)	ug/g	<10		<10	<10	<10	<10	10	3866849
F3 (C16-C34 Hydrocarbons)	ug/g	<50		<50	<50	<50	<50	50	3866849
F4 (C34-C50 Hydrocarbons)	ug/g	<50		<50	<50	<50	<50	50	3866849
Reached Baseline at C50	ug/g	Yes		Yes	Yes	Yes	Yes		3866849
Extraction Surrogate Recovery (%)									
D10-Ethylbenzene	%	90	85	92	86	89	87		3866048
o-Terphenyl	%	93		93	94	90	92		3866849
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	99	101	101	99	100	98		3866048
4-Bromofluorobenzene	%	98	102	103	102	106	100		3866048
D4-1,2-Dichloroethane	%	96	102	98	97	102	98		3866048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		YW3227	YW3228	YW3229	YW3230	YW3231		
Sampling Date		2014/12/11 13:00	2014/12/11 13:50	2014/12/11 13:50	2014/12/11 15:20	2014/12/11 16:00		
COC Number		496344-15-01	496344-15-01	496344-15-01	496344-15-01	496344-15-01		
	Units	**BH-306-3.0-3.7**	**BH-306-5.3-5.9**	**DUP-03**	**BH-307-3.8-4.4**	**BH-307-6.1-6.7**	**RDL**	**QC Batch**
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.021	0.024	<0.0071	<0.0071	0.0071	3869476
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
1-Methylnaphthalene	ug/g	<0.0050	0.015	0.017	<0.0050	0.0069	0.0050	3865019
2-Methylnaphthalene	ug/g	<0.0050	0.0061	0.0076	<0.0050	<0.0050	0.0050	3865019
Naphthalene	ug/g	<0.0050	<0.0050	0.0051	<0.0050	<0.0050	0.0050	3865019
Phenanthrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3865019
Extraction Surrogate Recovery (%)								
D10-Anthracene	%	90	88	89	89	90		3865019
D14-Terphenyl (FS)	%	95	93	93	94	92		3865019
D8-Acenaphthylene	%	84	82	82	85	82		3865019

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YW3227
Sample ID: BH-306-3.0-3.7
Matrix: Soil

Collected: 2014/12/11
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3869476	N/A	2014/12/23	Cristina Carriere
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866048	2014/12/17	2014/12/19	Mamdouh Salib
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/19	Jolanta Kawzowicz
Acid Extractable Metals Analysis by ICP	ICP	3866097	2014/12/19	2014/12/19	Azita Fazaeli
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam ID: YW3227 Dup
Sample ID: BH-306-3.0-3.7
Matrix: Soil

Collected: 2014/12/11
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866048	2014/12/17	2014/12/19	Mamdouh Salib

Maxxam ID: YW3228
Sample ID: BH-306-5.3-5.9
Matrix: Soil

Collected: 2014/12/11
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3869476	N/A	2014/12/23	Cristina Carriere
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866048	2014/12/17	2014/12/19	Mamdouh Salib
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/19	Jolanta Kawzowicz
Acid Extractable Metals Analysis by ICP	ICP	3866097	2014/12/19	2014/12/19	Azita Fazaeli
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam ID: YW3229
Sample ID: DUP-03
Matrix: Soil

Collected: 2014/12/11
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3869476	N/A	2014/12/23	Cristina Carriere
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866048	2014/12/17	2014/12/19	Mamdouh Salib
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/19	Jolanta Kawzowicz
Acid Extractable Metals Analysis by ICP	ICP	3866097	2014/12/19	2014/12/19	Azita Fazaeli
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam ID: YW3230
Sample ID: BH-307-3.8-4.4
Matrix: Soil

Collected: 2014/12/11
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3869476	N/A	2014/12/23	Cristina Carriere

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YW3230
Sample ID: BH-307-3.8-4.4
Matrix: Soil

Collected: 2014/12/11
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866048	2014/12/17	2014/12/19	Mamdouh Salib
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/19	Jolanta Kawzowicz
Acid Extractable Metals Analysis by ICP	ICP	3866097	2014/12/19	2014/12/19	Azita Fazaeli
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam ID: YW3231
Sample ID: BH-307-6.1-6.7
Matrix: Soil

Collected: 2014/12/11
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3869476	N/A	2014/12/23	Cristina Carriere
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866048	2014/12/17	2014/12/19	Mamdouh Salib
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/19	Jolanta Kawzowicz
Acid Extractable Metals Analysis by ICP	ICP	3866097	2014/12/19	2014/12/19	Azita Fazaeli
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865019	YZ	Method Blank	D10-Anthracene	2014/12/19		89	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		92	%	50 - 130
			D8-Acenaphthylene	2014/12/19		86	%	50 - 130
			Acenaphthene	2014/12/19	<0.0050		ug/g	
			Acenaphthylene	2014/12/19	<0.0050		ug/g	
			Anthracene	2014/12/19	<0.0050		ug/g	
			Fluoranthene	2014/12/19	<0.0050		ug/g	
			Fluorene	2014/12/19	<0.0050		ug/g	
			1-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			2-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			Naphthalene	2014/12/19	<0.0050		ug/g	
			Phenanthrene	2014/12/19	<0.0050		ug/g	
3866048	MSB	Method Blank	1,4-Difluorobenzene	2014/12/19		94	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		99	%	60 - 140
			D10-Ethylbenzene	2014/12/19		93	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		95	%	60 - 140
			Benzene	2014/12/19	<0.020		ug/g	
			Toluene	2014/12/19	<0.020		ug/g	
			Ethylbenzene	2014/12/19	<0.020		ug/g	
			o-Xylene	2014/12/19	<0.020		ug/g	
			p+m-Xylene	2014/12/19	<0.040		ug/g	
			Total Xylenes	2014/12/19	<0.040		ug/g	
			Hexane	2014/12/19	<0.50		ug/g	
			F1 (C6-C10)	2014/12/19	<10		ug/g	
			F1 (C6-C10) - BTEX	2014/12/19	<10		ug/g	
3866097	AFZ	Method Blank	Acid Extractable Lead (Pb)	2014/12/19	<5.0		ug/g	
3866849	JKA	Method Blank	o-Terphenyl	2014/12/19		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/19	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2014/12/19	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2014/12/19	<50		ug/g	
3866048	MSB	RPD [YW3227-05]	Benzene	2014/12/19	NC		%	50
			Toluene	2014/12/19	NC		%	50
			Ethylbenzene	2014/12/19	NC		%	50
			o-Xylene	2014/12/19	NC		%	50
			p+m-Xylene	2014/12/19	NC		%	50
			Total Xylenes	2014/12/19	NC		%	50
			Hexane	2014/12/19	NC		%	50
			F1 (C6-C10)	2014/12/19	NC		%	30
			F1 (C6-C10) - BTEX	2014/12/19	NC		%	30
3866048	MSB	Matrix Spike [YW3227-05]	1,4-Difluorobenzene	2014/12/19		112	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		116	%	60 - 140
			D10-Ethylbenzene	2014/12/19		110	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		114	%	60 - 140
			Benzene	2014/12/19		83	%	60 - 140
			Toluene	2014/12/19		87	%	60 - 140
			Ethylbenzene	2014/12/19		98	%	60 - 140
			o-Xylene	2014/12/19		100	%	60 - 140
			p+m-Xylene	2014/12/19		90	%	60 - 140
			Hexane	2014/12/19		62	%	60 - 140
			F1 (C6-C10)	2014/12/19		74	%	60 - 140

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865019	YZ	LCS	D10-Anthracene	2014/12/19		87	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		93	%	50 - 130
			D8-Acenaphthylene	2014/12/19		84	%	50 - 130
			Acenaphthene	2014/12/19		89	%	50 - 130
			Acenaphthylene	2014/12/19		85	%	50 - 130
			Anthracene	2014/12/19		88	%	50 - 130
			Fluoranthene	2014/12/19		91	%	50 - 130
			Fluorene	2014/12/19		89	%	50 - 130
			1-Methylnaphthalene	2014/12/19		93	%	50 - 130
			2-Methylnaphthalene	2014/12/19		91	%	50 - 130
			Naphthalene	2014/12/19		82	%	50 - 130
			Phenanthrene	2014/12/19		84	%	50 - 130
3866048	MSB	LCS	1,4-Difluorobenzene	2014/12/19		98	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		107	%	60 - 140
			D10-Ethylbenzene	2014/12/19		90	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		101	%	60 - 140
			Benzene	2014/12/19		90	%	60 - 140
			Toluene	2014/12/19		95	%	60 - 140
			Ethylbenzene	2014/12/19		106	%	60 - 140
			o-Xylene	2014/12/19		107	%	60 - 140
			p+m-Xylene	2014/12/19		97	%	60 - 140
			Hexane	2014/12/19		78	%	60 - 140
			F1 (C6-C10)	2014/12/19		93	%	80 - 120
3866097	AFZ	LCS	Acid Extractable Lead (Pb)	2014/12/19		108	%	80 - 120
3866849	JKA	LCS	o-Terphenyl	2014/12/19		95	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/19		85	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2014/12/19		99	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2014/12/19		96	%	80 - 120

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

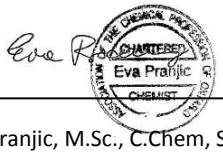
Maxxam Job #: B4N7299
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services



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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496344-15-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): Edward Parker	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B(a)P	PCBs	Hexane	2- and 3-ring PAHs: naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, fluorene, fluoranthene, phenanthrene							
1	BH-306-3.0-3.7			✓		7	2014/12/11	13:00			✓	✓			✓								✓	✓					
2	BH-306-5.3-5.9			✓		7	2014/12/11	13:50			✓	✓			✓								✓	✓					
3	Dup-03			✓		7	2014/12/11	13:50			✓	✓			✓								✓	✓					
4	~~BH 3.8-4.4~~ ep					ep	~~2014/12/11~~	HH:MM																					
5	BH-307-3.8-4.4			✓		7	2014/12/11	15:20			✓	✓			✓								✓	✓					
6	BH-307-6.1-6.7			✓		7	2014/12/11	16:00			✓	✓			✓								✓	✓					
7							YYYY/MM/DD	HH:MM																					
8							YYYY/MM/DD	HH:MM																					
9							YYYY/MM/DD	HH:MM																					
10							YYYY/MM/DD	HH:MM																					

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS ☐ PWQO

☐ Other _____ 1/C/C Med/Fine

SPECIAL INSTRUCTIONS:

Test Samples as per TDG

ICC - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: Ø

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID: 1	YES	NO	TEMP 1	TEMP 2	TEMP 3
CUSTODY SEAL PRESENT	✓		2	0	1
CUSTODY SEAL INTACT	✓				

COOLER ID:	YES	NO	TEMP 1	TEMP 2	TEMP 3
CUSTODY SEAL PRESENT					
CUSTODY SEAL INTACT					

COOLER ID:	YES	NO	TEMP 1	TEMP 2	TEMP 3
CUSTODY SEAL PRESENT					
CUSTODY SEAL INTACT					

LAB USE ONLY
MAXXAM JOB # B4N7299
SAMPLES
LABELED BY: FW
VERIFIED BY: MA

RELINQUISHED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR) HH:MM	RECEIVED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR) HH:MM
1. signature	Edward Parker	2014/12/12	17:30	1. signature	MARK ABBOTT	2014/12/15	14:52
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/11

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N7299*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

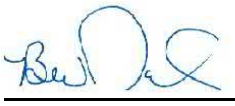
	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 
Review Date: *2015/01/07*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-16-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/23
Report #: R3269787
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N7305
Received: 2014/12/15, 14:52

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Laboratory Method	Primary Reference
Methylnaphthalene Sum	4	CAM SOP-00301	EPA 8270D m
Petroleum Hydro. CCME F1 & BTEX in Soil	4	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil	4	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	4	CAM SOP-00447	EPA 6020A m
Moisture	4	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	4	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds in Soil	2	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-16-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/23
Report #: R3269787
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N7305
Received: 2014/12/15, 14:52

Encryption Key Kudrat Bajwa
Kudrat Bajwa
23 Dec 2014 14:59:22 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN SOIL (SOIL)

Maxxam ID		YW3246	YW3246	YW3247	YW3248	YW3249		
Sampling Date		2014/12/12 11:45	2014/12/12 11:45	2014/12/12 12:50	2014/12/12 13:40	2014/12/12 14:25		
COC Number		496344-16-01	496344-16-01	496344-16-01	496344-16-01	496344-16-01		
	Units	**BH-308-3.0-3.7**	**BH-308-3.0-3.7 Lab-Dup**	**BH-308-6.1-6.7**	**BH-309-3.0-3.7**	**BH-309-5.3-5.9**	**RDL**	**QC Batch**
Moisture	%	27		28	29	14	1.0	3865259
Benzene	ug/g	<0.020		<0.020	<0.020	<0.020	0.020	3866178
Toluene	ug/g	<0.020		<0.020	<0.020	<0.020	0.020	3866178
Ethylbenzene	ug/g	<0.020		<0.020	<0.020	<0.020	0.020	3866178
o-Xylene	ug/g	<0.020		<0.020	<0.020	<0.020	0.020	3866178
p+m-Xylene	ug/g	<0.040		<0.040	<0.040	<0.040	0.040	3866178
Total Xylenes	ug/g	<0.040		<0.040	<0.040	<0.040	0.040	3866178
Hexane	ug/g	<0.50		<0.50	<0.50	<0.50	0.50	3866178
F1 (C6-C10)	ug/g	<10		<10	<10	<10	10	3866178
F1 (C6-C10) - BTEX	ug/g	<10		<10	<10	<10	10	3866178
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	10	3866849
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	50	3866849
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	50	3866849
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes		3866849
Extraction Surrogate Recovery (%)								
D10-Ethylbenzene	%	95		91	80	90		3866178
o-Terphenyl	%	90	90	90	87	90		3866849
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene	%	103		103	102	104		3866178
4-Bromofluorobenzene	%	92		93	97	89		3866178
D4-1,2-Dichloroethane	%	100		99	99	100		3866178

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YW3246	YW3247		YW3248		YW3249		
Sampling Date		2014/12/12 11:45	2014/12/12 12:50		2014/12/12 13:40		2014/12/12 14:25		
COC Number		496344-16-01	496344-16-01		496344-16-01		496344-16-01		
	Units	**BH-308-3.0-3.7**	**BH-308-6.1-6.7**	**RDL**	**BH-309-3.0-3.7**	**RDL**	**BH-309-5.3-5.9**	**RDL**	**QC Batch**
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	0.0071	<0.0071	0.0071	<0.0071	0.0071	3862760
Acenaphthene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Anthracene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Chrysene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Fluoranthene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Fluorene	ug/g	<0.0050	<0.0050	0.0050	<0.010 (1)	0.010	<0.0050	0.0050	3865019
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Naphthalene	ug/g	<0.0050	<0.0050	0.0050	<0.020 (1)	0.020	<0.0050	0.0050	3865019
Phenanthrene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Pyrene	ug/g	<0.0050	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	3865019
Extraction Surrogate Recovery (%)									
D10-Anthracene	%	87	88		89		92		3865019
D14-Terphenyl (FS)	%	91	97		96		94		3865019
D8-Acenaphthylene	%	81	81		84		84		3865019

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) DL was raised due to matrix interference.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		YW3246	YW3247	YW3248	YW3249		
Sampling Date		2014/12/12 11:45	2014/12/12 12:50	2014/12/12 13:40	2014/12/12 14:25		
COC Number		496344-16-01	496344-16-01	496344-16-01	496344-16-01		
	Units	**BH-308-3.0-3.7**	**BH-308-6.1-6.7**	**BH-309-3.0-3.7**	**BH-309-5.3-5.9**	**RDL**	**QC Batch**
Acid Extractable Arsenic (As)	ug/g	<1.0	1.0	<1.0	<1.0	1.0	3866241
Acid Extractable Barium (Ba)	ug/g	97	150	120	30	0.50	3866241
Acid Extractable Chromium (Cr)	ug/g	26	41	35	7.5	1.0	3866241
Acid Extractable Copper (Cu)	ug/g	16	21	19	8.3	0.50	3866241
Acid Extractable Lead (Pb)	ug/g	3.4	3.8	3.7	2.1	1.0	3866241
Acid Extractable Zinc (Zn)	ug/g	33	52	41	12	5.0	3866241

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		YW3246	YW3247		
Sampling Date		2014/12/12 11:45	2014/12/12 12:50		
COC Number		496344-16-01	496344-16-01		
	Units	**BH-308-3.0-3.7**	**BH-308-6.1-6.7**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/g	<0.050	<0.050	0.050	3861394
Ethylene Dibromide	ug/g	<0.050	<0.050	0.050	3861394
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	0.050	3861394
Extraction Surrogate Recovery (%)					
D10-o-Xylene	%	93	99		3861394
Instrument Surrogate Recovery (%)					
4-Bromofluorobenzene	%	82	83		3861394
D4-1,2-Dichloroethane	%	101	100		3861394
D8-Toluene	%	103	103		3861394

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YW3246
Sample ID: BH-308-3.0-3.7
Matrix: Soil

Collected: 2014/12/12
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3862760	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/19	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou
Volatile Organic Compounds in Soil	P&T/MS	3861394	2014/12/16	2014/12/17	Karen Huynh

Maxxam ID: YW3246 Dup
Sample ID: BH-308-3.0-3.7
Matrix: Soil

Collected: 2014/12/12
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/20	Jolanta Kawzowicz

Maxxam ID: YW3247
Sample ID: BH-308-6.1-6.7
Matrix: Soil

Collected: 2014/12/12
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3862760	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou
Volatile Organic Compounds in Soil	P&T/MS	3861394	2014/12/16	2014/12/17	Karen Huynh

Maxxam ID: YW3248
Sample ID: BH-309-3.0-3.7
Matrix: Soil

Collected: 2014/12/12
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3862760	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/20	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YW3249
Sample ID: BH-309-5.3-5.9
Matrix: Soil

Collected: 2014/12/12
Relinquished: 2014/12/12
Received: 2014/12/15

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3862760	N/A	2014/12/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3866178	2014/12/16	2014/12/19	Simon Xi
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3866849	2014/12/19	2014/12/19	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3866241	2014/12/19	2014/12/19	Grace Bu
Moisture	BAL	3865259	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3861394	KH1	Method Blank	4-Bromofluorobenzene	2014/12/17		85	%	60 - 140
			D10-o-Xylene	2014/12/17		96	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/17		98	%	60 - 140
			D8-Toluene	2014/12/17		102	%	60 - 140
			1,2-Dichloroethane	2014/12/17	<0.050		ug/g	
			Ethylene Dibromide	2014/12/17	<0.050		ug/g	
			Methyl t-butyl ether (MTBE)	2014/12/17	<0.050		ug/g	
3865019	YZ	Method Blank	D10-Anthracene	2014/12/19		89	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		92	%	50 - 130
			D8-Acenaphthylene	2014/12/19		86	%	50 - 130
			Acenaphthene	2014/12/19	<0.0050		ug/g	
			Acenaphthylene	2014/12/19	<0.0050		ug/g	
			Anthracene	2014/12/19	<0.0050		ug/g	
			Benzo(a)anthracene	2014/12/19	<0.0050		ug/g	
			Benzo(a)pyrene	2014/12/19	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2014/12/19	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2014/12/19	<0.0050		ug/g	
			Benzo(k)fluoranthene	2014/12/19	<0.0050		ug/g	
			Chrysene	2014/12/19	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2014/12/19	<0.0050		ug/g	
			Fluoranthene	2014/12/19	<0.0050		ug/g	
			Fluorene	2014/12/19	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2014/12/19	<0.0050		ug/g	
			1-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			2-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			Naphthalene	2014/12/19	<0.0050		ug/g	
			Phenanthrene	2014/12/19	<0.0050		ug/g	
			Pyrene	2014/12/19	<0.0050		ug/g	
3866178	JXI	Method Blank	1,4-Difluorobenzene	2014/12/19		101	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		100	%	60 - 140
			D10-Ethylbenzene	2014/12/19		90	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		97	%	60 - 140
			Benzene	2014/12/19	<0.020		ug/g	
			Toluene	2014/12/19	<0.020		ug/g	
			Ethylbenzene	2014/12/19	<0.020		ug/g	
			o-Xylene	2014/12/19	<0.020		ug/g	
			p+m-Xylene	2014/12/19	<0.040		ug/g	
			Total Xylenes	2014/12/19	<0.040		ug/g	
			Hexane	2014/12/19	<0.50		ug/g	
			F1 (C6-C10)	2014/12/19	<10		ug/g	
			F1 (C6-C10) - BTEX	2014/12/19	<10		ug/g	
3866241	GBU	Method Blank	Acid Extractable Arsenic (As)	2014/12/19	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2014/12/19	<0.50		ug/g	
			Acid Extractable Chromium (Cr)	2014/12/19	<1.0		ug/g	
			Acid Extractable Copper (Cu)	2014/12/19	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2014/12/19	<1.0		ug/g	
			Acid Extractable Zinc (Zn)	2014/12/19	<5.0		ug/g	
3866849	JKA	Method Blank	o-Terphenyl	2014/12/19		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/19	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2014/12/19	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2014/12/19	<50		ug/g	

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3866849	JKA	RPD [YW3246-03]	F2 (C10-C16 Hydrocarbons)	2014/12/20	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/12/20	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/12/20	NC		%	30
3866849	JKA	Matrix Spike [YW3246-03]	o-Terphenyl	2014/12/19		100	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/19		96	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/19		108	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/19		105	%	50 - 130
3861394	KH1	LCS	4-Bromofluorobenzene	2014/12/17		105	%	60 - 140
			D10-o-Xylene	2014/12/17		107	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/17		97	%	60 - 140
			D8-Toluene	2014/12/17		100	%	60 - 140
			1,2-Dichloroethane	2014/12/17		103	%	60 - 130
			Ethylene Dibromide	2014/12/17		101	%	60 - 130
			Methyl t-butyl ether (MTBE)	2014/12/17		104	%	60 - 130
3865019	YZ	LCS	D10-Anthracene	2014/12/19		87	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		93	%	50 - 130
			D8-Acenaphthylene	2014/12/19		84	%	50 - 130
			Acenaphthene	2014/12/19		89	%	50 - 130
			Acenaphthylene	2014/12/19		85	%	50 - 130
			Anthracene	2014/12/19		88	%	50 - 130
			Benzo(a)anthracene	2014/12/19		82	%	50 - 130
			Benzo(a)pyrene	2014/12/19		89	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/19		88	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/19		88	%	50 - 130
			Benzo(k)fluoranthene	2014/12/19		90	%	50 - 130
			Chrysene	2014/12/19		88	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/19		89	%	50 - 130
			Fluoranthene	2014/12/19		91	%	50 - 130
			Fluorene	2014/12/19		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/19		96	%	50 - 130
			1-Methylnaphthalene	2014/12/19		93	%	50 - 130
			2-Methylnaphthalene	2014/12/19		91	%	50 - 130
			Naphthalene	2014/12/19		82	%	50 - 130
			Phenanthrene	2014/12/19		84	%	50 - 130
			Pyrene	2014/12/19		91	%	50 - 130
3866178	JXI	LCS	1,4-Difluorobenzene	2014/12/19		100	%	60 - 140
			4-Bromofluorobenzene	2014/12/19		107	%	60 - 140
			D10-Ethylbenzene	2014/12/19		102	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/19		99	%	60 - 140
			Benzene	2014/12/19		113	%	60 - 140
			Toluene	2014/12/19		106	%	60 - 140
			Ethylbenzene	2014/12/19		115	%	60 - 140
			o-Xylene	2014/12/19		119	%	60 - 140
			p+m-Xylene	2014/12/19		112	%	60 - 140
			Hexane	2014/12/19		111	%	60 - 140
			F1 (C6-C10)	2014/12/19		98	%	80 - 120
3866241	GBU	LCS	Acid Extractable Arsenic (As)	2014/12/19		103	%	80 - 120
			Acid Extractable Barium (Ba)	2014/12/19		103	%	80 - 120
			Acid Extractable Chromium (Cr)	2014/12/19		102	%	80 - 120
			Acid Extractable Copper (Cu)	2014/12/19		103	%	80 - 120

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Acid Extractable Lead (Pb)	2014/12/19		101	%	80 - 120
			Acid Extractable Zinc (Zn)	2014/12/19		104	%	80 - 120
3866849	JKA	LCS	o-Terphenyl	2014/12/19		95	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/19		85	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2014/12/19		99	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2014/12/19		96	%	80 - 120

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

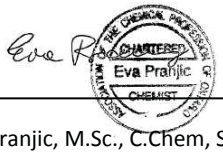
Maxxam Job #: B4N7305
Report Date: 2014/12/23

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services



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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496344-16-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): Edward Parker	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B/a/P	PCBs	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE		Hexane	Metals(6) - arsenic, barium, chromium, copper, lead, zinc				
1	BH-308-3.0-3.7			✓		8	2014/12/12	11:45			✓	✓	✓										✓		✓	✓				
2	BH-308-6.1-6.7			✓		8	2014/12/12	12:50			✓	✓	✓										✓		✓	✓				
3	BH-309-3.0-3.7			✓		6	2014/12/12	13:40			✓	✓	✓												✓	✓				
4	BH-309-5.3-5.9			✓		6	2014/12/12	14:25			✓	✓	✓												✓	✓				
5							YYYY/MM/DD	HH:MM																						
6							YYYY/MM/DD	HH:MM																						
7							YYYY/MM/DD	HH:MM																						
8							YYYY/MM/DD	HH:MM																						
9							YYYY/MM/DD	HH:MM																						
10							YYYY/MM/DD	HH:MM																						

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS ☐ PWQO

☐ Other

1/C/C med/fine

SPECIAL INSTRUCTIONS:

Test samples as per TDG
ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water

N/A

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID:																								
CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	LAB USE ONLY		
PRESENT	✓			2	0	1	PRESENT							PRESENT							MAXXAM JOB #		
INTACT	✓						INTACT							INTACT							B4N7305		

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)	SAMPLES	
1. signature	Edward Parker printed name	2014/12/12 YYYY/MM/DD	17:30 HH:MM	1. signature	MARIA FERRER printed name	2014/12/15 YYYY/MM/DD	14:52 HH:MM	LABELED BY: FW	VERIFIED BY: MAF
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM		
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM		

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/12

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N7305*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2015/01/07*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-17-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273066
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9434
Received: 2014/12/17, 17:55

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Methylnaphthalene Sum	2	CAM SOP-00301	EPA 8270D m
Petroleum Hydro. CCME F1 & BTEX in Soil	2	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil	2	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	2	CAM SOP-00447	EPA 6020A m
Moisture	2	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	2	CAM SOP-00318	EPA 8270D m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-17-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273066
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9434
Received: 2014/12/17, 17:55

Encryption Key Kudrat Bajwa
Kudrat Bajwa
29 Dec 2014 09:25:51 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN SOIL (SOIL)

Maxxam ID		YX3054	YX3055		
Sampling Date		2014/12/13 10:50	2014/12/13 11:40		
COC Number		496344-17-01	496344-17-01		
	Units	**BH-311-3.0-3.7**	**BH-311-5.5-6.1**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	<0.020	0.020	3869158
Toluene	ug/g	<0.020	<0.020	0.020	3869158
Ethylbenzene	ug/g	<0.020	<0.020	0.020	3869158
o-Xylene	ug/g	<0.020	<0.020	0.020	3869158
p+m-Xylene	ug/g	<0.040	<0.040	0.040	3869158
Total Xylenes	ug/g	<0.040	<0.040	0.040	3869158
Hexane	ug/g	<0.50	<0.50	0.50	3869158
F1 (C6-C10)	ug/g	<10	<10	10	3869158
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	3869158
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	3869151
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	50	3869151
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	50	3869151
Reached Baseline at C50	ug/g	Yes	Yes		3869151
Extraction Surrogate Recovery (%)					
D10-Ethylbenzene	%	81	89		3869158
o-Terphenyl	%	101	98		3869151
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	104	104		3869158
4-Bromofluorobenzene	%	99	97		3869158
D4-1,2-Dichloroethane	%	96	94		3869158

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YX3054	YX3055		
Sampling Date		2014/12/13 10:50	2014/12/13 11:40		
COC Number		496344-17-01	496344-17-01		
	Units	**BH-311-3.0-3.7**	**BH-311-5.5-6.1**	**RDL**	**QC Batch**
Moisture	%	30	17	1.0	3868602
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	0.0071	3863849
Acenaphthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0050	3867006
Anthracene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Chrysene	ug/g	<0.0050	<0.0050	0.0050	3867006
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	0.0050	3867006
Fluoranthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Fluorene	ug/g	<0.0050	<0.0050	0.0050	3867006
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	0.0050	3867006
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	3867006
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	3867006
Naphthalene	ug/g	<0.0050	<0.0050	0.0050	3867006
Phenanthrene	ug/g	<0.0050	<0.0050	0.0050	3867006
Pyrene	ug/g	<0.0050	<0.0050	0.0050	3867006
Extraction Surrogate Recovery (%)					
D10-Anthracene	%	83	92		3867006
D14-Terphenyl (FS)	%	102	103		3867006
D8-Acenaphthylene	%	84	86		3867006

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		YX3054	YX3055		
Sampling Date		2014/12/13 10:50	2014/12/13 11:40		
COC Number		496344-17-01	496344-17-01		
	Units	**BH-311-3.0-3.7**	**BH-311-5.5-6.1**	**RDL**	**QC Batch**
Acid Extractable Arsenic (As)	ug/g	<1.0	<1.0	1.0	3869519
Acid Extractable Barium (Ba)	ug/g	270	37	0.50	3869519
Acid Extractable Chromium (Cr)	ug/g	72	6.1	1.0	3869519
Acid Extractable Copper (Cu)	ug/g	32	12	0.50	3869519
Acid Extractable Lead (Pb)	ug/g	6.3	2.2	1.0	3869519
Acid Extractable Zinc (Zn)	ug/g	89	18	5.0	3869519

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3054
Sample ID: BH-311-3.0-3.7
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3863849	N/A	2014/12/23	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869158	2014/12/18	2014/12/23	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3869151	2014/12/23	2014/12/23	Jeevaraj Jeevaratrnam
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869519	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3868602	N/A	2014/12/22	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3867006	2014/12/19	2014/12/22	Lingyun Feng

Maxxam ID: YX3055
Sample ID: BH-311-5.5-6.1
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3863849	N/A	2014/12/23	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869158	2014/12/18	2014/12/23	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3869151	2014/12/23	2014/12/23	Jeevaraj Jeevaratrnam
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869519	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3868602	N/A	2014/12/22	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3867006	2014/12/19	2014/12/22	Lingyun Feng

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3867006	LFE	Method Blank	D10-Anthracene	2014/12/22		90	%	50 - 130
			D14-Terphenyl (FS)	2014/12/22		101	%	50 - 130
			D8-Acenaphthylene	2014/12/22		86	%	50 - 130
			Acenaphthene	2014/12/22	<0.0050		ug/g	
			Acenaphthylene	2014/12/22	<0.0050		ug/g	
			Anthracene	2014/12/22	<0.0050		ug/g	
			Benzo(a)anthracene	2014/12/22	<0.0050		ug/g	
			Benzo(a)pyrene	2014/12/22	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2014/12/22	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2014/12/22	<0.0050		ug/g	
			Benzo(k)fluoranthene	2014/12/22	<0.0050		ug/g	
			Chrysene	2014/12/22	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2014/12/22	<0.0050		ug/g	
			Fluoranthene	2014/12/22	<0.0050		ug/g	
			Fluorene	2014/12/22	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2014/12/22	<0.0050		ug/g	
			1-Methylnaphthalene	2014/12/22	<0.0050		ug/g	
			2-Methylnaphthalene	2014/12/22	<0.0050		ug/g	
			Naphthalene	2014/12/22	<0.0050		ug/g	
			Phenanthrene	2014/12/22	<0.0050		ug/g	
			Pyrene	2014/12/22	<0.0050		ug/g	
3869151	JJE	Method Blank	o-Terphenyl	2014/12/23		99	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/23	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2014/12/23	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2014/12/23	<50		ug/g	
3869158	AGA	Method Blank	1,4-Difluorobenzene	2014/12/23		106	%	60 - 140
			4-Bromofluorobenzene	2014/12/23		104	%	60 - 140
			D10-Ethylbenzene	2014/12/23		84	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/23		99	%	60 - 140
			Benzene	2014/12/23	<0.020		ug/g	
			Toluene	2014/12/23	<0.020		ug/g	
			Ethylbenzene	2014/12/23	<0.020		ug/g	
			o-Xylene	2014/12/23	<0.020		ug/g	
			p+m-Xylene	2014/12/23	<0.040		ug/g	
			Total Xylenes	2014/12/23	<0.040		ug/g	
			Hexane	2014/12/23	<0.50		ug/g	
			F1 (C6-C10)	2014/12/23	<10		ug/g	
			F1 (C6-C10) - BTEX	2014/12/23	<10		ug/g	
3869519	GBU	Method Blank	Acid Extractable Arsenic (As)	2014/12/23	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2014/12/23	<0.50		ug/g	
			Acid Extractable Chromium (Cr)	2014/12/23	<1.0		ug/g	
			Acid Extractable Copper (Cu)	2014/12/23	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2014/12/23	<1.0		ug/g	
			Acid Extractable Zinc (Zn)	2014/12/23	<5.0		ug/g	
3867006	LFE	LCS	D10-Anthracene	2014/12/22		91	%	50 - 130
			D14-Terphenyl (FS)	2014/12/22		102	%	50 - 130
			D8-Acenaphthylene	2014/12/22		89	%	50 - 130
			Acenaphthene	2014/12/22		84	%	50 - 130
			Acenaphthylene	2014/12/22		87	%	50 - 130
			Anthracene	2014/12/22		87	%	50 - 130
			Benzo(a)anthracene	2014/12/22		87	%	50 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Benzo(a)pyrene	2014/12/22		86	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/22		83	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/22		79	%	50 - 130
			Benzo(k)fluoranthene	2014/12/22		83	%	50 - 130
			Chrysene	2014/12/22		87	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/22		82	%	50 - 130
			Fluoranthene	2014/12/22		96	%	50 - 130
			Fluorene	2014/12/22		93	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/22		92	%	50 - 130
			1-Methylnaphthalene	2014/12/22		93	%	50 - 130
			2-Methylnaphthalene	2014/12/22		93	%	50 - 130
			Naphthalene	2014/12/22		83	%	50 - 130
			Phenanthrene	2014/12/22		84	%	50 - 130
			Pyrene	2014/12/22		97	%	50 - 130
3869151	JJE	LCS	o-Terphenyl	2014/12/23		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/23		93	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2014/12/23		99	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2014/12/23		104	%	80 - 120
3869158	AGA	LCS	1,4-Difluorobenzene	2014/12/23		104	%	60 - 140
			4-Bromofluorobenzene	2014/12/23		99	%	60 - 140
			D10-Ethylbenzene	2014/12/23		81	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/23		96	%	60 - 140
			Benzene	2014/12/23		87	%	60 - 140
			Toluene	2014/12/23		89	%	60 - 140
			Ethylbenzene	2014/12/23		96	%	60 - 140
			o-Xylene	2014/12/23		92	%	60 - 140
			p+m-Xylene	2014/12/23		87	%	60 - 140
			Hexane	2014/12/23		105	%	60 - 140
			F1 (C6-C10)	2014/12/23		88	%	80 - 120
3869519	GBU	LCS	Acid Extractable Arsenic (As)	2014/12/23		101	%	80 - 120
			Acid Extractable Barium (Ba)	2014/12/23		100	%	80 - 120
			Acid Extractable Chromium (Cr)	2014/12/23		100	%	80 - 120
			Acid Extractable Copper (Cu)	2014/12/23		101	%	80 - 120
			Acid Extractable Lead (Pb)	2014/12/23		100	%	80 - 120
			Acid Extractable Zinc (Zn)	2014/12/23		103	%	80 - 120

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9434
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

Page 1 of 1

C of C # 496344-17-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B(a)P	PCBs	n-HEXANE			METALS (6) arsenic, barium, cadmium, copper, lead, chromium					
1	BH-311-3,0-3,7			✓		6	2014/12/13	10:50	N	N	✓	✓	✓										✓			✓				
2	BH-311-5,5-6,1			✓		6	2014/12/13	11:40	N	N	✓	✓	✓										✓			✓				
3							YYYY/MM/DD	HH:MM																						
4							YYYY/MM/DD	HH:MM																						
5							YYYY/MM/DD	HH:MM																						
6							YYYY/MM/DD	HH:MM																						
7							YYYY/MM/DD	HH:MM																						
8							YYYY/MM/DD	HH:MM																						
9							YYYY/MM/DD	HH:MM																						
10							YYYY/MM/DD	HH:MM																						

IOL SITE LOCATION:
1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable):
N/A

IOL PROJECT # (if applicable):
ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM:
4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO
☐ Other
1/c/c FINE/MED

SPECIAL INSTRUCTIONS:
TEST SAMPLES AS PER TDG
ICE-YES

JARS USED AND NOT SUBMITTED
Enter N/A for Water
Ø

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	YES	NO
CUSTODY SEAL PRESENT	✓	
CUSTODY SEAL INTACT	✓	
TEMP	3 (1)	3 (2)	3 (3)

COOLER ID:	YES	NO
CUSTODY SEAL PRESENT		
CUSTODY SEAL INTACT		
TEMP	1	2	3

COOLER ID:	YES	NO
CUSTODY SEAL PRESENT		
CUSTODY SEAL INTACT		
TEMP	1	2	3

LAB USE ONLY
MAXXAM JOB #
B4N9434
SAMPLES
LABELED BY: HG1
VERIFIED BY: FW

RELINQUISHED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR) HH:MM	RECEIVED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR) HH:MM
1. signature	THEO MOSHONAS	2014/12/13	15:20	1. signature	ALKA PATEL	2014/12/17	17:55
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON

White: Maxxam

Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/13

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9434*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

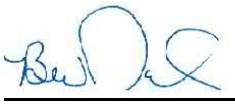
Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel*

Data Reviewed by (Signature): 

Review Date: *2015/01/07*

Revision Date (if applicable):

Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-06-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2015/01/26
Report #: R3312635
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B4N9446
Received: 2014/12/17, 17:55

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Polychlorinated Biphenyl in Soil	1	CAM SOP-00309	EPA 8082A m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key

Kudrat Bajwa
26 Jan 2015 09:21:03 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PCBS (SOIL)

Maxxam ID		YX3107		
Sampling Date		2014/12/13 09:25		
COC Number		496344-06-01		
	Units	**FIELD BLANK-01**	**RDL**	**QC Batch**
Total PCB	ug/g	<0.010	0.010	3864616
Extraction Surrogate Recovery (%)				
Decachlorobiphenyl	%	95		3864616

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3107
Sample ID: FIELD BLANK-01
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Polychlorinated Biphenyl in Soil	GC/ECD	3864616	2014/12/18	2014/12/18	Li Peng

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C

Revised Report: Report re-issued to include only PCB analysis results for sample ID FIELD BLANK-01, as per request by D. Bettencourt.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3864616	LPG	Method Blank	Decachlorobiphenyl	2014/12/18		91	%	60 - 130
			Total PCB	2014/12/18	<0.010		ug/g	
3864616	LPG	LCS	Decachlorobiphenyl	2014/12/18		91	%	60 - 130
			Total PCB	2014/12/18		103	%	60 - 130

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496344-06-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B(a)P	PCBs	n-hexane
1	TRIP BLANK-01				✓	2	2014/12/13	09:40	N	N	✓			✓									✓
2	FIELD BLANK-01				✓	2	2014/12/13	09:25	N	N			✓									✓	
3							YYYY/MM/DD	HH:MM															
4							YYYY/MM/DD	HH:MM															
5							YYYY/MM/DD	HH:MM															
6							YYYY/MM/DD	HH:MM															
7							YYYY/MM/DD	HH:MM															
8							YYYY/MM/DD	HH:MM															
9							YYYY/MM/DD	HH:MM															
10							YYYY/MM/DD	HH:MM															

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
- [X] REG 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC (Please indicate which Reg. version and if RSC required)
- [ ] ODWS [ ] PWQO
- [ ] Other

1/c/o MED/FINE

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOC

ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: 0

TURNAROUND TIME
- Standard (5 days) [X]
- Rush (3 days) [ ]
- (2 days) [ ]
- (1 day) [ ]
- (same day) [ ]

Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT	✓			3	3	3
CUSTODY SEAL INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

RELINQUISHED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR) HH:MM	RECEIVED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR) HH:MM
1. signature	THEO MOSHONAS	2014/12/15	15:20	1. signature	ALICA PATEL	2014/12/17	17:55
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

LAB USE ONLY
MAXXAM JOB # B4N9446
SAMPLES
LABELED BY: HG1
VERIFIED BY: FW

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/13

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9446*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery			*X*	*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2015/01/07*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-06-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2015/01/26
Report #: R3312667
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B4N9446
Received: 2014/12/17, 17:55

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Methylnaphthalene Sum	1	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	1	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME PHC-CWS m
Moisture	1	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	1	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds in Soil	1	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-06-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2015/01/26
Report #: R3312667
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B4N9446
Received: 2014/12/17, 17:55

Encryption Key Kudrat Bajwa
Kudrat Bajwa
26 Jan 2015 09:34:27 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822
==========
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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YX3107		
Sampling Date		2014/12/13 09:25		
COC Number		496344-06-01		
	Units	**FIELD BLANK-01**	**RDL**	**QC Batch**
Moisture	%	<1.0	1.0	3865050
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	3863849
Acenaphthene	ug/g	<0.0050	0.0050	3865019
Acenaphthylene	ug/g	<0.0050	0.0050	3865019
Anthracene	ug/g	<0.0050	0.0050	3865019
Benzo(a)anthracene	ug/g	<0.0050	0.0050	3865019
Benzo(a)pyrene	ug/g	<0.0050	0.0050	3865019
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	3865019
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	3865019
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	3865019
Chrysene	ug/g	<0.0050	0.0050	3865019
Dibenz(a,h)anthracene	ug/g	<0.0050	0.0050	3865019
Fluoranthene	ug/g	<0.0050	0.0050	3865019
Fluorene	ug/g	<0.0050	0.0050	3865019
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	3865019
1-Methylnaphthalene	ug/g	<0.0050	0.0050	3865019
2-Methylnaphthalene	ug/g	<0.0050	0.0050	3865019
Naphthalene	ug/g	<0.0050	0.0050	3865019
Phenanthrene	ug/g	<0.0050	0.0050	3865019
Pyrene	ug/g	<0.0050	0.0050	3865019
Extraction Surrogate Recovery (%)				
D10-Anthracene	%	88		3865019
D14-Terphenyl (FS)	%	91		3865019
D8-Acenaphthylene	%	84		3865019

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		YX3106		
Sampling Date		2014/12/13 09:40		
COC Number		496344-06-01		
	Units	**TRIP BLANK-01**	**RDL**	**QC Batch**
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	3862761
Acetone (2-Propanone)	ug/g	<0.50	0.50	3864759
Benzene	ug/g	<0.020	0.020	3864759
Bromodichloromethane	ug/g	<0.050	0.050	3864759
Bromoform	ug/g	<0.050	0.050	3864759
Bromomethane	ug/g	<0.050	0.050	3864759
Carbon Tetrachloride	ug/g	<0.050	0.050	3864759
Chlorobenzene	ug/g	<0.050	0.050	3864759
Chloroform	ug/g	<0.050	0.050	3864759
Dibromochloromethane	ug/g	<0.050	0.050	3864759
1,2-Dichlorobenzene	ug/g	<0.050	0.050	3864759
1,3-Dichlorobenzene	ug/g	<0.050	0.050	3864759
1,4-Dichlorobenzene	ug/g	<0.050	0.050	3864759
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	0.050	3864759
1,1-Dichloroethane	ug/g	<0.050	0.050	3864759
1,2-Dichloroethane	ug/g	<0.050	0.050	3864759
1,1-Dichloroethylene	ug/g	<0.050	0.050	3864759
cis-1,2-Dichloroethylene	ug/g	<0.050	0.050	3864759
trans-1,2-Dichloroethylene	ug/g	<0.050	0.050	3864759
1,2-Dichloropropane	ug/g	<0.050	0.050	3864759
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	3864759
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	3864759
Ethylbenzene	ug/g	<0.020	0.020	3864759
Ethylene Dibromide	ug/g	<0.050	0.050	3864759
Hexane	ug/g	<0.050	0.050	3864759
Methylene Chloride(Dichloromethane)	ug/g	<0.050	0.050	3864759
Methyl Isobutyl Ketone	ug/g	<0.50	0.50	3864759
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	0.50	3864759
Methyl t-butyl ether (MTBE)	ug/g	<0.050	0.050	3864759
Styrene	ug/g	<0.050	0.050	3864759
1,1,1,2-Tetrachloroethane	ug/g	<0.050	0.050	3864759
1,1,2,2-Tetrachloroethane	ug/g	<0.050	0.050	3864759
Tetrachloroethylene	ug/g	<0.050	0.050	3864759
Toluene	ug/g	<0.020	0.020	3864759

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		YX3106		
Sampling Date		2014/12/13 09:40		
COC Number		496344-06-01		
	Units	**TRIP BLANK-01**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/g	<0.050	0.050	3864759
1,1,2-Trichloroethane	ug/g	<0.050	0.050	3864759
Trichloroethylene	ug/g	<0.050	0.050	3864759
Vinyl Chloride	ug/g	<0.020	0.020	3864759
p+m-Xylene	ug/g	<0.020	0.020	3864759
o-Xylene	ug/g	<0.020	0.020	3864759
Total Xylenes	ug/g	<0.020	0.020	3864759
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	0.050	3864759
Extraction Surrogate Recovery (%)				
D10-o-Xylene	%	84		3864759
Instrument Surrogate Recovery (%)				
4-Bromofluorobenzene	%	86		3864759
D4-1,2-Dichloroethane	%	100		3864759
D8-Toluene	%	102		3864759

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		YX3106		
Sampling Date		2014/12/13 09:40		
COC Number		496344-06-01		
	Units	**TRIP BLANK-01**	**RDL**	**QC Batch**
F1 (C6-C10)	ug/g	<10	10	3869158
F1 (C6-C10) - BTEX	ug/g	<10	10	3869158
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	80		3869158
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	106		3869158
4-Bromofluorobenzene	%	100		3869158
D4-1,2-Dichloroethane	%	97		3869158

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3106
Sample ID: TRIP BLANK-01
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3862761	N/A	2014/12/23	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869158	2014/12/18	2014/12/23	Anca Ganea
Volatile Organic Compounds in Soil	P&T/MS	3864759	2014/12/18	2014/12/19	Karen Huynh

Maxxam ID: YX3107
Sample ID: FIELD BLANK-01
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3863849	N/A	2014/12/22	Automated Statchk
Moisture	BAL	3865050	N/A	2014/12/18	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3865019	2014/12/18	2014/12/19	Yuan Zhou

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C

Revised Report: Report re-issued to include only PAH analysis results for sample ID FIELD BLANK-01 and VOC, F1BTEX, F2-F4 analysis for sample ID TRIP BLANK-01, as per request by D. Bettencourt.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3864759	KH1	Method Blank	4-Bromofluorobenzene	2014/12/19		85	%	60 - 140
			D10-o-Xylene	2014/12/19		98	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	60 - 140
			D8-Toluene	2014/12/19		102	%	60 - 140
			Acetone (2-Propanone)	2014/12/19	<0.50		ug/g	
			Benzene	2014/12/19	<0.020		ug/g	
			Bromodichloromethane	2014/12/19	<0.050		ug/g	
			Bromoform	2014/12/19	<0.050		ug/g	
			Bromomethane	2014/12/19	<0.050		ug/g	
			Carbon Tetrachloride	2014/12/19	<0.050		ug/g	
			Chlorobenzene	2014/12/19	<0.050		ug/g	
			Chloroform	2014/12/19	<0.050		ug/g	
			Dibromochloromethane	2014/12/19	<0.050		ug/g	
			1,2-Dichlorobenzene	2014/12/19	<0.050		ug/g	
			1,3-Dichlorobenzene	2014/12/19	<0.050		ug/g	
			1,4-Dichlorobenzene	2014/12/19	<0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2014/12/19	<0.050		ug/g	
			1,1-Dichloroethane	2014/12/19	<0.050		ug/g	
			1,2-Dichloroethane	2014/12/19	<0.050		ug/g	
			1,1-Dichloroethylene	2014/12/19	<0.050		ug/g	
			cis-1,2-Dichloroethylene	2014/12/19	<0.050		ug/g	
			trans-1,2-Dichloroethylene	2014/12/19	<0.050		ug/g	
			1,2-Dichloropropane	2014/12/19	<0.050		ug/g	
			cis-1,3-Dichloropropene	2014/12/19	<0.030		ug/g	
			trans-1,3-Dichloropropene	2014/12/19	<0.040		ug/g	
			Ethylbenzene	2014/12/19	<0.020		ug/g	
			Ethylene Dibromide	2014/12/19	<0.050		ug/g	
			Hexane	2014/12/19	<0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2014/12/19	<0.050		ug/g	
			Methyl Isobutyl Ketone	2014/12/19	<0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2014/12/19	<0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.050		ug/g	
			Styrene	2014/12/19	<0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2014/12/19	<0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2014/12/19	<0.050		ug/g	
			Tetrachloroethylene	2014/12/19	<0.050		ug/g	
			Toluene	2014/12/19	<0.020		ug/g	
			1,1,1-Trichloroethane	2014/12/19	<0.050		ug/g	
			1,1,2-Trichloroethane	2014/12/19	<0.050		ug/g	
			Trichloroethylene	2014/12/19	<0.050		ug/g	
			Vinyl Chloride	2014/12/19	<0.020		ug/g	
			p+m-Xylene	2014/12/19	<0.020		ug/g	
			o-Xylene	2014/12/19	<0.020		ug/g	
			Total Xylenes	2014/12/19	<0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2014/12/19	<0.050		ug/g	
3865019	YZ	Method Blank	D10-Anthracene	2014/12/19		89	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		92	%	50 - 130
			D8-Acenaphthylene	2014/12/19		86	%	50 - 130
			Acenaphthene	2014/12/19	<0.0050		ug/g	
			Acenaphthylene	2014/12/19	<0.0050		ug/g	
			Anthracene	2014/12/19	<0.0050		ug/g	

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Benzo(a)anthracene	2014/12/19	<0.0050		ug/g	
			Benzo(a)pyrene	2014/12/19	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2014/12/19	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2014/12/19	<0.0050		ug/g	
			Benzo(k)fluoranthene	2014/12/19	<0.0050		ug/g	
			Chrysene	2014/12/19	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2014/12/19	<0.0050		ug/g	
			Fluoranthene	2014/12/19	<0.0050		ug/g	
			Fluorene	2014/12/19	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2014/12/19	<0.0050		ug/g	
			1-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			2-Methylnaphthalene	2014/12/19	<0.0050		ug/g	
			Naphthalene	2014/12/19	<0.0050		ug/g	
			Phenanthrene	2014/12/19	<0.0050		ug/g	
			Pyrene	2014/12/19	<0.0050		ug/g	
3869158	AGA	Method Blank	1,4-Difluorobenzene	2014/12/23		106	%	60 - 140
			4-Bromofluorobenzene	2014/12/23		104	%	60 - 140
			D10-Ethylbenzene	2014/12/23		84	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/23		99	%	60 - 140
			F1 (C6-C10)	2014/12/23	<10		ug/g	
			F1 (C6-C10) - BTEX	2014/12/23	<10		ug/g	
3864759	KH1	LCS	4-Bromofluorobenzene	2014/12/19		105	%	60 - 140
			D10-o-Xylene	2014/12/19		102	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/19		96	%	60 - 140
			D8-Toluene	2014/12/19		99	%	60 - 140
			Acetone (2-Propanone)	2014/12/19		101	%	60 - 140
			Benzene	2014/12/19		101	%	60 - 130
			Bromodichloromethane	2014/12/19		95	%	60 - 130
			Bromoform	2014/12/19		93	%	60 - 130
			Bromomethane	2014/12/19		98	%	60 - 140
			Carbon Tetrachloride	2014/12/19		104	%	60 - 130
			Chlorobenzene	2014/12/19		97	%	60 - 130
			Chloroform	2014/12/19		102	%	60 - 130
			Dibromochloromethane	2014/12/19		96	%	60 - 130
			1,2-Dichlorobenzene	2014/12/19		95	%	60 - 130
			1,3-Dichlorobenzene	2014/12/19		94	%	60 - 130
			1,4-Dichlorobenzene	2014/12/19		89	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2014/12/19		100	%	60 - 140
			1,1-Dichloroethane	2014/12/19		103	%	60 - 130
			1,2-Dichloroethane	2014/12/19		101	%	60 - 130
			1,1-Dichloroethylene	2014/12/19		110	%	60 - 130
			cis-1,2-Dichloroethylene	2014/12/19		102	%	60 - 130
			trans-1,2-Dichloroethylene	2014/12/19		103	%	60 - 130
			1,2-Dichloropropane	2014/12/19		99	%	60 - 130
			cis-1,3-Dichloropropene	2014/12/19		92	%	60 - 130
			trans-1,3-Dichloropropene	2014/12/19		89	%	60 - 130
			Ethylbenzene	2014/12/19		97	%	60 - 130
			Ethylene Dibromide	2014/12/19		102	%	60 - 130
			Hexane	2014/12/19		98	%	60 - 130
			Methylene Chloride(Dichloromethane)	2014/12/19		105	%	60 - 130
			Methyl Isobutyl Ketone	2014/12/19		104	%	60 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Methyl Ethyl Ketone (2-Butanone)	2014/12/19		101	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/12/19		105	%	60 - 130
			Styrene	2014/12/19		105	%	60 - 130
			1,1,1,2-Tetrachloroethane	2014/12/19		97	%	60 - 130
			1,1,2,2-Tetrachloroethane	2014/12/19		101	%	60 - 130
			Tetrachloroethylene	2014/12/19		99	%	60 - 130
			Toluene	2014/12/19		95	%	60 - 130
			1,1,1-Trichloroethane	2014/12/19		103	%	60 - 130
			1,1,2-Trichloroethane	2014/12/19		97	%	60 - 130
			Trichloroethylene	2014/12/19		102	%	60 - 130
			Vinyl Chloride	2014/12/19		99	%	60 - 130
			p+m-Xylene	2014/12/19		102	%	60 - 130
			o-Xylene	2014/12/19		97	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2014/12/19		103	%	60 - 130
3865019	YZ	LCS	D10-Anthracene	2014/12/19		87	%	50 - 130
			D14-Terphenyl (FS)	2014/12/19		93	%	50 - 130
			D8-Acenaphthylene	2014/12/19		84	%	50 - 130
			Acenaphthene	2014/12/19		89	%	50 - 130
			Acenaphthylene	2014/12/19		85	%	50 - 130
			Anthracene	2014/12/19		88	%	50 - 130
			Benzo(a)anthracene	2014/12/19		82	%	50 - 130
			Benzo(a)pyrene	2014/12/19		89	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/19		88	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/19		88	%	50 - 130
			Benzo(k)fluoranthene	2014/12/19		90	%	50 - 130
			Chrysene	2014/12/19		88	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/19		89	%	50 - 130
			Fluoranthene	2014/12/19		91	%	50 - 130
			Fluorene	2014/12/19		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/19		96	%	50 - 130
			1-Methylnaphthalene	2014/12/19		93	%	50 - 130
			2-Methylnaphthalene	2014/12/19		91	%	50 - 130
			Naphthalene	2014/12/19		82	%	50 - 130
			Phenanthrene	2014/12/19		84	%	50 - 130
			Pyrene	2014/12/19		91	%	50 - 130
3869158	AGA	LCS	1,4-Difluorobenzene	2014/12/23		104	%	60 - 140
			4-Bromofluorobenzene	2014/12/23		99	%	60 - 140
			D10-Ethylbenzene	2014/12/23		81	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/23		96	%	60 - 140
			F1 (C6-C10)	2014/12/23		88	%	80 - 120

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9446
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496344-06-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B(a)P	PCBs	n-hexane
1	TRIP BLANK-01				✓	2	2014/12/13	09:40	N	N	✓			✓									✓
2	FIELD BLANK-01				✓	2	2014/12/13	09:25	N	N			✓									✓	
3							YYYY/MM/DD	HH:MM															
4							YYYY/MM/DD	HH:MM															
5							YYYY/MM/DD	HH:MM															
6							YYYY/MM/DD	HH:MM															
7							YYYY/MM/DD	HH:MM															
8							YYYY/MM/DD	HH:MM															
9							YYYY/MM/DD	HH:MM															
10							YYYY/MM/DD	HH:MM															

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO
☐ Other

1/c/a MED/FINE

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOC

ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT	✓			3	3	3	PRESENT							PRESENT						
INTACT	✓						INTACT							INTACT						

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	THEO MOSHONAS printed name	2014/12/15	15:20	1. signature	ALICA PATEL printed name	2014/12/17	17:55
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

LAB USE ONLY
MAXXAM JOB # B4N9446
SAMPLES
LABELED BY: HG1
VERIFIED BY: FW

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/13

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9446*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2015/01/07*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-03-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273068
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9454
Received: 2014/12/17, 17:55

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Methylnaphthalene Sum	2	CAM SOP-00301	EPA 8270D m
Petroleum Hydro. CCME F1 & BTEX in Soil	2	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil	2	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	2	CAM SOP-00447	EPA 6020A m
Moisture	2	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	2	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds in Soil	2	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496344-03-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273068
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9454
Received: 2014/12/17, 17:55

Encryption Key Kudrat Bajwa
Kudrat Bajwa
29 Dec 2014 09:54:36 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN SOIL (SOIL)

Maxxam ID		YX3167	YX3167	YX3168		
Sampling Date		2014/12/13 08:10	2014/12/13 08:10	2014/12/13 09:20		
COC Number		496344-03-01	496344-03-01	496344-03-01		
	Units	**BH-310-3.0-3.7**	**BH-310-3.0-3.7 Lab-Dup**	**BH-310-5.5-6.1**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	<0.020	<0.020	0.020	3869158
Toluene	ug/g	<0.020	<0.020	<0.020	0.020	3869158
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	0.020	3869158
o-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	3869158
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	0.040	3869158
Total Xylenes	ug/g	<0.040	<0.040	<0.040	0.040	3869158
Hexane	ug/g	<0.50	<0.50	<0.50	0.50	3869158
F1 (C6-C10)	ug/g	<10	<10	<10	10	3869158
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	3869158
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	3869151
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	50	3869151
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	50	3869151
Reached Baseline at C50	ug/g	Yes	Yes	Yes		3869151
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	71	80	75		3869158
o-Terphenyl	%	100	98	95		3869151
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	107	102	104		3869158
4-Bromofluorobenzene	%	105	101	97		3869158
D4-1,2-Dichloroethane	%	99	95	97		3869158

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

O.REG 153 PAHS (SOIL)

Maxxam ID		YX3167	YX3168		
Sampling Date		2014/12/13 08:10	2014/12/13 09:20		
COC Number		496344-03-01	496344-03-01		
	Units	**BH-310-3.0-3.7**	**BH-310-5.5-6.1**	**RDL**	**QC Batch**
Moisture	%	19	29	1.0	3866414
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	0.0071	3863849
Acenaphthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0050	3867006
Anthracene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	0.0050	3867006
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Chrysene	ug/g	<0.0050	<0.0050	0.0050	3867006
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	0.0050	3867006
Fluoranthene	ug/g	<0.0050	<0.0050	0.0050	3867006
Fluorene	ug/g	<0.0050	<0.0050	0.0050	3867006
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	0.0050	3867006
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	3867006
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	3867006
Naphthalene	ug/g	<0.0050	<0.0050	0.0050	3867006
Phenanthrene	ug/g	<0.0050	<0.0050	0.0050	3867006
Pyrene	ug/g	<0.0050	<0.0050	0.0050	3867006
Extraction Surrogate Recovery (%)					
D10-Anthracene	%	95	84		3867006
D14-Terphenyl (FS)	%	103	101		3867006
D8-Acenaphthylene	%	87	85		3867006

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		YX3167	YX3168	YX3168		
Sampling Date		2014/12/13 08:10	2014/12/13 09:20	2014/12/13 09:20		
COC Number		496344-03-01	496344-03-01	496344-03-01		
	Units	**BH-310-3.0-3.7**	**BH-310-5.5-6.1**	**BH-310-5.5-6.1 Lab-Dup**	**RDL**	**QC Batch**
Acid Extractable Arsenic (As)	ug/g	<1.0	<1.0	<1.0	1.0	3869519
Acid Extractable Barium (Ba)	ug/g	64	140	140	0.50	3869519
Acid Extractable Chromium (Cr)	ug/g	19	41	42	1.0	3869519
Acid Extractable Copper (Cu)	ug/g	9.1	21	21	0.50	3869519
Acid Extractable Lead (Pb)	ug/g	2.1	3.8	3.8	1.0	3869519
Acid Extractable Zinc (Zn)	ug/g	20	48	50	5.0	3869519

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		YX3167	YX3167	YX3168		
Sampling Date		2014/12/13 08:10	2014/12/13 08:10	2014/12/13 09:20		
COC Number		496344-03-01	496344-03-01	496344-03-01		
	Units	**BH-310-3.0-3.7**	**BH-310-3.0-3.7 Lab-Dup**	**BH-310-5.5-6.1**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	3864759
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	0.050	3864759
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	0.050	3864759
Extraction Surrogate Recovery (%)						
D10-o-Xylene	%	88	92	89		3864759
Instrument Surrogate Recovery (%)						
4-Bromofluorobenzene	%	82	82	83		3864759
D4-1,2-Dichloroethane	%	96	96	98		3864759
D8-Toluene	%	105	105	102		3864759

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3167
Sample ID: BH-310-3.0-3.7
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3863849	N/A	2014/12/23	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869158	2014/12/18	2014/12/23	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3869151	2014/12/23	2014/12/23	Jeevaraj Jeevaratrnam
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869519	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3866414	N/A	2014/12/19	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3867006	2014/12/19	2014/12/22	Lingyun Feng
Volatile Organic Compounds in Soil	P&T/MS	3864759	2014/12/18	2014/12/19	Karen Huynh

Maxxam ID: YX3167 Dup
Sample ID: BH-310-3.0-3.7
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869158	2014/12/18	2014/12/23	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3869151	2014/12/23	2014/12/23	Jeevaraj Jeevaratrnam
Volatile Organic Compounds in Soil	P&T/MS	3864759	2014/12/18	2014/12/19	Karen Huynh

Maxxam ID: YX3168
Sample ID: BH-310-5.5-6.1
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3863849	N/A	2014/12/23	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869158	2014/12/18	2014/12/23	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3869151	2014/12/23	2014/12/23	Jeevaraj Jeevaratrnam
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869519	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3866414	N/A	2014/12/19	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3867006	2014/12/19	2014/12/22	Lingyun Feng
Volatile Organic Compounds in Soil	P&T/MS	3864759	2014/12/18	2014/12/19	Karen Huynh

Maxxam ID: YX3168 Dup
Sample ID: BH-310-5.5-6.1
Matrix: Soil

Collected: 2014/12/13
Relinquished: 2014/12/15
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869519	2014/12/23	2014/12/23	Grace Bu

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3864759	KH1	Method Blank	4-Bromofluorobenzene	2014/12/19		85	%	60 - 140
			D10-o-Xylene	2014/12/19		98	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	60 - 140
			D8-Toluene	2014/12/19		102	%	60 - 140
			1,2-Dichloroethane	2014/12/19	<0.050		ug/g	
			Ethylene Dibromide	2014/12/19	<0.050		ug/g	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.050		ug/g	
3867006	LFE	Method Blank	D10-Anthracene	2014/12/22		90	%	50 - 130
			D14-Terphenyl (FS)	2014/12/22		101	%	50 - 130
			D8-Acenaphthylene	2014/12/22		86	%	50 - 130
			Acenaphthene	2014/12/22	<0.0050		ug/g	
			Acenaphthylene	2014/12/22	<0.0050		ug/g	
			Anthracene	2014/12/22	<0.0050		ug/g	
			Benzo(a)anthracene	2014/12/22	<0.0050		ug/g	
			Benzo(a)pyrene	2014/12/22	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2014/12/22	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2014/12/22	<0.0050		ug/g	
			Benzo(k)fluoranthene	2014/12/22	<0.0050		ug/g	
			Chrysene	2014/12/22	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2014/12/22	<0.0050		ug/g	
			Fluoranthene	2014/12/22	<0.0050		ug/g	
			Fluorene	2014/12/22	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2014/12/22	<0.0050		ug/g	
			1-Methylnaphthalene	2014/12/22	<0.0050		ug/g	
			2-Methylnaphthalene	2014/12/22	<0.0050		ug/g	
			Naphthalene	2014/12/22	<0.0050		ug/g	
			Phenanthrene	2014/12/22	<0.0050		ug/g	
			Pyrene	2014/12/22	<0.0050		ug/g	
3869151	JJE	Method Blank	o-Terphenyl	2014/12/23		99	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/23	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2014/12/23	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2014/12/23	<50		ug/g	
3869158	AGA	Method Blank	1,4-Difluorobenzene	2014/12/23		106	%	60 - 140
			4-Bromofluorobenzene	2014/12/23		104	%	60 - 140
			D10-Ethylbenzene	2014/12/23		84	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/23		99	%	60 - 140
			Benzene	2014/12/23	<0.020		ug/g	
			Toluene	2014/12/23	<0.020		ug/g	
			Ethylbenzene	2014/12/23	<0.020		ug/g	
			o-Xylene	2014/12/23	<0.020		ug/g	
			p+m-Xylene	2014/12/23	<0.040		ug/g	
			Total Xylenes	2014/12/23	<0.040		ug/g	
			Hexane	2014/12/23	<0.50		ug/g	
			F1 (C6-C10)	2014/12/23	<10		ug/g	
			F1 (C6-C10) - BTEX	2014/12/23	<10		ug/g	
3869519	GBU	Method Blank	Acid Extractable Arsenic (As)	2014/12/23	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2014/12/23	<0.50		ug/g	
			Acid Extractable Chromium (Cr)	2014/12/23	<1.0		ug/g	
			Acid Extractable Copper (Cu)	2014/12/23	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2014/12/23	<1.0		ug/g	
			Acid Extractable Zinc (Zn)	2014/12/23	<5.0		ug/g	

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3864759	KH1	RPD [YX3167-05]	1,2-Dichloroethane	2014/12/19	NC		%	50
			Ethylene Dibromide	2014/12/19	NC		%	50
			Methyl t-butyl ether (MTBE)	2014/12/19	NC		%	50
3869151	JJE	RPD [YX3167-04]	F2 (C10-C16 Hydrocarbons)	2014/12/23	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/12/23	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/12/23	NC		%	30
3869158	AGA	RPD [YX3167-06]	Benzene	2014/12/23	NC		%	50
			Toluene	2014/12/23	NC		%	50
			Ethylbenzene	2014/12/23	NC		%	50
			o-Xylene	2014/12/23	NC		%	50
			p+m-Xylene	2014/12/23	NC		%	50
			Total Xylenes	2014/12/23	NC		%	50
			Hexane	2014/12/23	NC		%	50
			F1 (C6-C10)	2014/12/23	NC		%	30
			F1 (C6-C10) - BTEX	2014/12/23	NC		%	30
3869519	GBU	RPD [YX3168-01]	Acid Extractable Arsenic (As)	2014/12/23	NC		%	30
			Acid Extractable Barium (Ba)	2014/12/23	2.3		%	30
			Acid Extractable Chromium (Cr)	2014/12/23	2.3		%	30
			Acid Extractable Copper (Cu)	2014/12/23	0.66		%	30
			Acid Extractable Lead (Pb)	2014/12/23	NC		%	30
			Acid Extractable Zinc (Zn)	2014/12/23	4.6		%	30
3864759	KH1	Matrix Spike [YX3167-05]	4-Bromofluorobenzene	2014/12/19		105	%	60 - 140
			D10-o-Xylene	2014/12/19		100	%	60 - 130
			D4-1,2-Dichloroethane	2014/12/19		94	%	60 - 140
			D8-Toluene	2014/12/19		100	%	60 - 140
			1,2-Dichloroethane	2014/12/19		98	%	60 - 140
			Ethylene Dibromide	2014/12/19		99	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/12/19		102	%	60 - 140
3869151	JJE	Matrix Spike [YX3167-04]	o-Terphenyl	2014/12/23		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/23		95	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/23		101	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/23		105	%	50 - 130
3869158	AGA	Matrix Spike [YX3167-06]	1,4-Difluorobenzene	2014/12/23		107	%	60 - 140
			4-Bromofluorobenzene	2014/12/23		102	%	60 - 140
			D10-Ethylbenzene	2014/12/23		88	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/23		96	%	60 - 140
			Benzene	2014/12/23		74	%	60 - 140
			Toluene	2014/12/23		78	%	60 - 140
			Ethylbenzene	2014/12/23		84	%	60 - 140
			o-Xylene	2014/12/23		81	%	60 - 140
			p+m-Xylene	2014/12/23		77	%	60 - 140
			Hexane	2014/12/23		84	%	60 - 140
			F1 (C6-C10)	2014/12/23		82	%	60 - 140
3869519	GBU	Matrix Spike [YX3168-01]	Acid Extractable Arsenic (As)	2014/12/23		95	%	75 - 125
			Acid Extractable Barium (Ba)	2014/12/23		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2014/12/23		NC	%	75 - 125
			Acid Extractable Copper (Cu)	2014/12/23		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2014/12/23		97	%	75 - 125
			Acid Extractable Zinc (Zn)	2014/12/23		NC	%	75 - 125
3864759	KH1	LCS	4-Bromofluorobenzene	2014/12/19		105	%	60 - 140
			D10-o-Xylene	2014/12/19		102	%	60 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			D4-1,2-Dichloroethane	2014/12/19		96	%	60 - 140
			D8-Toluene	2014/12/19		99	%	60 - 140
			1,2-Dichloroethane	2014/12/19		101	%	60 - 130
			Ethylene Dibromide	2014/12/19		102	%	60 - 130
			Methyl t-butyl ether (MTBE)	2014/12/19		105	%	60 - 130
3867006	LFE	LCS	D10-Anthracene	2014/12/22		91	%	50 - 130
			D14-Terphenyl (FS)	2014/12/22		102	%	50 - 130
			D8-Acenaphthylene	2014/12/22		89	%	50 - 130
			Acenaphthene	2014/12/22		84	%	50 - 130
			Acenaphthylene	2014/12/22		87	%	50 - 130
			Anthracene	2014/12/22		87	%	50 - 130
			Benzo(a)anthracene	2014/12/22		87	%	50 - 130
			Benzo(a)pyrene	2014/12/22		86	%	50 - 130
			Benzo(b/j)fluoranthene	2014/12/22		83	%	50 - 130
			Benzo(g,h,i)perylene	2014/12/22		79	%	50 - 130
			Benzo(k)fluoranthene	2014/12/22		83	%	50 - 130
			Chrysene	2014/12/22		87	%	50 - 130
			Dibenz(a,h)anthracene	2014/12/22		82	%	50 - 130
			Fluoranthene	2014/12/22		96	%	50 - 130
			Fluorene	2014/12/22		93	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/12/22		92	%	50 - 130
			1-Methylnaphthalene	2014/12/22		93	%	50 - 130
			2-Methylnaphthalene	2014/12/22		93	%	50 - 130
			Naphthalene	2014/12/22		83	%	50 - 130
			Phenanthrene	2014/12/22		84	%	50 - 130
			Pyrene	2014/12/22		97	%	50 - 130
3869151	JJE	LCS	o-Terphenyl	2014/12/23		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/23		93	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2014/12/23		99	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2014/12/23		104	%	80 - 120
3869158	AGA	LCS	1,4-Difluorobenzene	2014/12/23		104	%	60 - 140
			4-Bromofluorobenzene	2014/12/23		99	%	60 - 140
			D10-Ethylbenzene	2014/12/23		81	%	60 - 140
			D4-1,2-Dichloroethane	2014/12/23		96	%	60 - 140
			Benzene	2014/12/23		87	%	60 - 140
			Toluene	2014/12/23		89	%	60 - 140
			Ethylbenzene	2014/12/23		96	%	60 - 140
			o-Xylene	2014/12/23		92	%	60 - 140
			p+m-Xylene	2014/12/23		87	%	60 - 140
			Hexane	2014/12/23		105	%	60 - 140
			F1 (C6-C10)	2014/12/23		88	%	80 - 120
3869519	GBU	LCS	Acid Extractable Arsenic (As)	2014/12/23		101	%	80 - 120
			Acid Extractable Barium (Ba)	2014/12/23		100	%	80 - 120
			Acid Extractable Chromium (Cr)	2014/12/23		100	%	80 - 120
			Acid Extractable Copper (Cu)	2014/12/23		101	%	80 - 120
			Acid Extractable Lead (Pb)	2014/12/23		100	%	80 - 120

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Acid Extractable Zinc (Zn)	2014/12/23		103	%	80 - 120

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.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9454
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496344-03-01

496344

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1 / BTEX	F2 - F4	PAHs	VOCs	Lead	ICPMS Metals	TCLP VOC	TCLP Inorganics	TCLP SVOCS	TCLP PCBs	TCLP B(a)P	PCBs	n-HEXANE	METALS (6) arsenic, barium, copper, lead, zinc, chromium			VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE		
1	BH-310-3.0-3.7			✓		8	2014/12/13	08:10	N	N	✓	✓	✓										✓	✓			✓		
2	BH-310-5.5-6.1			✓		8	2014/12/13	09:20	N	N	✓	✓	✓										✓	✓			✓		
3							YYYY/MM/DD	HH:MM																					
4							YYYY/MM/DD	HH:MM																					
5							YYYY/MM/DD	HH:MM																					
6							YYYY/MM/DD	HH:MM																					
7							YYYY/MM/DD	HH:MM																					
8							YYYY/MM/DD	HH:MM																					
9							YYYY/MM/DD	HH:MM																					
10							YYYY/MM/DD	HH:MM																					

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS ☐ PWQO

☐ Other _____

FINE/MED 1/c/c

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOG

ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: 0

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID: 1	YES	NO	TEMP 1	TEMP 2	TEMP 3
CUSTODY SEAL PRESENT	✓		3	3	3
CUSTODY SEAL INTACT	✓				

COOLER ID:	YES	NO	TEMP 1	TEMP 2	TEMP 3
CUSTODY SEAL PRESENT					
CUSTODY SEAL INTACT					

COOLER ID:	YES	NO	TEMP 1	TEMP 2	TEMP 3
CUSTODY SEAL PRESENT					
CUSTODY SEAL INTACT					

LAB USE ONLY
MAXXAM JOB # B4N9454
SAMPLES

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature: THEO MOSHONAS	THEO MOSHONAS	2014/12/15	15:20	1. signature:	ALKA PATEL	2014/12/17	17:55
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

LABELED BY: HG1 VERIFIED BY: FW

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/13

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9454*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

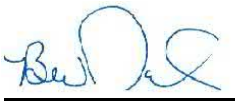
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 

Review Date: *2015/01/07*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496340-03-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2015/01/26
Report #: R3312639
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B4N9466
Received: 2014/12/17, 17:55

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	1	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020 m
Volatile Organic Compounds in Water	1	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key

Kudrat Bajwa
26 Jan 2015 09:22:35 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

LEAD (DISSOLVED) IN WATER

Maxxam ID		YX3183		
Sampling Date		2014/12/15 12:55		
COC Number		496340-03-01		
	Units	**BH-306**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	0.50	3866045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN WATER (WATER)

Maxxam ID		YX3183		
Sampling Date		2014/12/15 12:55		
COC Number		496340-03-01		
	Units	**BH-306**	**RDL**	**QC Batch**
Benzene	ug/L	220	0.40	3869167
Toluene	ug/L	18	0.40	3869167
Ethylbenzene	ug/L	900	0.40	3869167
o-Xylene	ug/L	60	0.40	3869167
p+m-Xylene	ug/L	370	0.80	3869167
Total Xylenes	ug/L	430	0.80	3869167
Hexane	ug/L	<10	10	3869167
F1 (C6-C10)	ug/L	2900	50	3869167
F1 (C6-C10) - BTEX	ug/L	1300	50	3869167
F2 (C10-C16 Hydrocarbons)	ug/L	1800	100	3869805
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	3869805
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	3869805
Reached Baseline at C50	ug/L	Yes		3869805
Extraction Surrogate Recovery (%)				
o-Terphenyl	%	93		3869805
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	103		3869167
4-Bromofluorobenzene	%	103		3869167
D10-Ethylbenzene	%	98		3869167
D4-1,2-Dichloroethane	%	92		3869167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		YX3183		
Sampling Date		2014/12/15 12:55		
COC Number		496340-03-01		
	Units	**BH-306**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<20	20	3865219
Ethylene Dibromide	ug/L	<20	20	3865219
Methyl t-butyl ether (MTBE)	ug/L	<20	20	3865219
Instrument Surrogate Recovery (%)				
4-Bromofluorobenzene	%	99		3865219
D4-1,2-Dichloroethane	%	101		3865219
D8-Toluene	%	99		3865219

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3183
Sample ID: BH-306
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-0.7°C

Revised Report: Report re-issued to include only sample ID BH-306 on this CofA, as per request by D. Bettencourt.

Sample YX3183-01 : VOC Analysis: Due to high concentrations of non-target analytes, sample required dilution. Detection limits were adjusted accordingly.
F1-BTEX Analysis:Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865219	SLM	Method Blank	4-Bromofluorobenzene	2014/12/19		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		104	%	70 - 130
			D8-Toluene	2014/12/19		97	%	70 - 130
			1,2-Dichloroethane	2014/12/19	<0.20		ug/L	
			Ethylene Dibromide	2014/12/19	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.20		ug/L	
3866045	ADA	Method Blank	Dissolved Arsenic (As)	2014/12/22	<1.0		ug/L	
			Dissolved Barium (Ba)	2014/12/22	<2.0		ug/L	
			Dissolved Chromium (Cr)	2014/12/22	<5.0		ug/L	
			Dissolved Copper (Cu)	2014/12/22	<1.0		ug/L	
			Dissolved Lead (Pb)	2014/12/22	<0.50		ug/L	
			Dissolved Zinc (Zn)	2014/12/22	<5.0		ug/L	
3869167	AAI	Method Blank	1,4-Difluorobenzene	2014/12/23		100	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		103	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23	<0.20		ug/L	
			Toluene	2014/12/23	<0.20		ug/L	
			Ethylbenzene	2014/12/23	<0.20		ug/L	
			o-Xylene	2014/12/23	<0.20		ug/L	
			p+m-Xylene	2014/12/23	<0.40		ug/L	
			Total Xylenes	2014/12/23	<0.40		ug/L	
			Hexane	2014/12/23	<5.0		ug/L	
			F1 (C6-C10)	2014/12/23	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/12/23	<25		ug/L	
3869805	KLI	Method Blank	o-Terphenyl	2014/12/24		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/12/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/12/24	<200		ug/L	
3865219	SLM	RPD [YX3184-04]	1,2-Dichloroethane	2014/12/20	NC		%	30
			Ethylene Dibromide	2014/12/20	NC		%	30
			Methyl t-butyl ether (MTBE)	2014/12/20	1.9		%	30
3869805	KLI	RPD [YX3184-02]	F2 (C10-C16 Hydrocarbons)	2014/12/24	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/12/24	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/12/24	NC		%	30
3865219	SLM	Matrix Spike [YX3183-04]	4-Bromofluorobenzene	2014/12/20		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/20		98	%	70 - 130
			D8-Toluene	2014/12/20		100	%	70 - 130
			1,2-Dichloroethane	2014/12/20		95	%	70 - 130
			Ethylene Dibromide	2014/12/20		102	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/20		93	%	70 - 130
3869805	KLI	Matrix Spike [YX3183-02]	o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		104	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		105	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/24		104	%	50 - 130
3865219	SLM	LCS	4-Bromofluorobenzene	2014/12/19		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	70 - 130
			D8-Toluene	2014/12/19		101	%	70 - 130
			1,2-Dichloroethane	2014/12/19		88	%	70 - 130
			Ethylene Dibromide	2014/12/19		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/19		86	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3866045	ADA	LCS	Dissolved Arsenic (As)	2014/12/22		101	%	80 - 120
			Dissolved Barium (Ba)	2014/12/22		103	%	80 - 120
			Dissolved Chromium (Cr)	2014/12/22		101	%	80 - 120
			Dissolved Copper (Cu)	2014/12/22		101	%	80 - 120
			Dissolved Lead (Pb)	2014/12/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2014/12/22		99	%	80 - 120
3869167	AAI	LCS	1,4-Difluorobenzene	2014/12/23		99	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		104	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23		93	%	70 - 130
			Toluene	2014/12/23		94	%	70 - 130
			Ethylbenzene	2014/12/23		101	%	70 - 130
			o-Xylene	2014/12/23		103	%	70 - 130
			p+m-Xylene	2014/12/23		93	%	70 - 130
			Hexane	2014/12/23		77	%	70 - 130
			F1 (C6-C10)	2014/12/23		88	%	70 - 130
3869805	KLI	LCS	o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		107	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/24		103	%	60 - 130

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496340-03-01

496340

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1/BTEX	F2-F4	VOC	LEAD	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE	n-hexane	METALS (6) arsenic, barium, chromium, copper, lead, zinc
1	BH-306	✓				12	2014/12/15	12:55	Y	N	✓	✓	✓	✓	✓	✓	
2	BH-309	✓				12	2014/12/15	14:05	Y	N	✓	✓	✓		✓	✓	✓
3	DUP-04	✓				12	2014/12/15	14:05	Y	N	✓	✓	✓		✓	✓	✓
4							YYYY/MM/DD	HH:MM									
5							YYYY/MM/DD	HH:MM									
6							YYYY/MM/DD	HH:MM									
7							YYYY/MM/DD	HH:MM									
8							YYYY/MM/DD	HH:MM									
9							YYYY/MM/DD	HH:MM									
10							YYYY/MM/DD	HH:MM									

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
- [X] REG 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
  (Please indicate which Reg. version and if RSC required)
- [ ] ODWS [ ] PWQO
- [ ] Other

I/C/C MED/FINE

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOC

ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
- Standard (5 days) [X]
- Rush (3 days) [ ]
- (2 days) [ ]
- (1 day) [ ]
- (same day) [ ]

Date Required

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT	✓			0	0	-2	PRESENT							PRESENT						
INTACT	✓						INTACT							INTACT						

LAB USE ONLY
MAXXAM JOB # B4N9466

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	THEO MOSHONAS printed name	2014/12/16 YYYY/MM/DD	17:00 HH:MM	1. signature	FANG WANG printed name	2014/12/17 YYYY/MM/DD	17:55 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

SAMPLES
LABELED BY: HG1
VERIFIED BY: FW

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/15

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9466*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

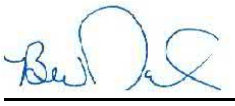
	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 
Review Date: *2015/01/07*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496340-03-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2015/01/26
Report #: R3312640
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B4N9466
Received: 2014/12/17, 17:55

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020 m
Volatile Organic Compounds in Water	2	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

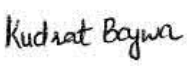
The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of 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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key



Kudrat Bajwa
26 Jan 2015 09:25:23 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN WATER (WATER)

Maxxam ID		YX3184	YX3184	YX3185		
Sampling Date		2014/12/15 14:05	2014/12/15 14:05	2014/12/15 14:05		
COC Number		496340-03-01	496340-03-01	496340-03-01		
	Units	**BH-309**	**BH-309 Lab-Dup**	**DUP-04**	**RDL**	**QC Batch**
Benzene	ug/L	0.26		0.32	0.20	3869167
Toluene	ug/L	<0.20		<0.20	0.20	3869167
Ethylbenzene	ug/L	0.52		0.54	0.20	3869167
o-Xylene	ug/L	<0.20		<0.20	0.20	3869167
p+m-Xylene	ug/L	<0.40		<0.40	0.40	3869167
Total Xylenes	ug/L	<0.40		<0.40	0.40	3869167
Hexane	ug/L	<5.0		<5.0	5.0	3869167
F1 (C6-C10)	ug/L	79		68	25	3869167
F1 (C6-C10) - BTEX	ug/L	78		67	25	3869167
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	100	3869805
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	200	3869805
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	200	3869805
Reached Baseline at C50	ug/L	Yes	Yes	Yes		3869805
Extraction Surrogate Recovery (%)						
o-Terphenyl	%	94	95	92		3869805
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	102		102		3869167
4-Bromofluorobenzene	%	102		103		3869167
D10-Ethylbenzene	%	96		97		3869167
D4-1,2-Dichloroethane	%	92		91		3869167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		YX3184	YX3185		
Sampling Date		2014/12/15 14:05	2014/12/15 14:05		
COC Number		496340-03-01	496340-03-01		
	Units	**BH-309**	**DUP-04**	**RDL**	**QC Batch**
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	1.0	3866045
Dissolved Barium (Ba)	ug/L	360	350	2.0	3866045
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	3866045
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	2.0	3866045
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	3866045
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	3866045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		YX3184	YX3184	YX3185		
Sampling Date		2014/12/15 14:05	2014/12/15 14:05	2014/12/15 14:05		
COC Number		496340-03-01	496340-03-01	496340-03-01		
	Units	**BH-309**	**BH-309 Lab-Dup**	**DUP-04**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<0.20	<0.20	<0.20	0.20	3865219
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	0.20	3865219
Methyl t-butyl ether (MTBE)	ug/L	1.0	1.0	0.98	0.20	3865219
Instrument Surrogate Recovery (%)						
4-Bromofluorobenzene	%	96	97	96		3865219
D4-1,2-Dichloroethane	%	101	101	101		3865219
D8-Toluene	%	97	98	98		3865219

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3184
Sample ID: BH-309
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam ID: YX3184 Dup
Sample ID: BH-309
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam ID: YX3185
Sample ID: DUP-04
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-0.7°C

Revised Report: Report re-issued to include only sample ID BH-309 and DUP-04 on this CofA, as per request by D. Bettencourt.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865219	SLM	Method Blank	4-Bromofluorobenzene	2014/12/19		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		104	%	70 - 130
			D8-Toluene	2014/12/19		97	%	70 - 130
			1,2-Dichloroethane	2014/12/19	<0.20		ug/L	
			Ethylene Dibromide	2014/12/19	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.20		ug/L	
3866045	ADA	Method Blank	Dissolved Arsenic (As)	2014/12/22	<1.0		ug/L	
			Dissolved Barium (Ba)	2014/12/22	<2.0		ug/L	
			Dissolved Chromium (Cr)	2014/12/22	<5.0		ug/L	
			Dissolved Copper (Cu)	2014/12/22	<1.0		ug/L	
			Dissolved Lead (Pb)	2014/12/22	<0.50		ug/L	
			Dissolved Zinc (Zn)	2014/12/22	<5.0		ug/L	
3869167	AAI	Method Blank	1,4-Difluorobenzene	2014/12/23		100	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		103	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23	<0.20		ug/L	
			Toluene	2014/12/23	<0.20		ug/L	
			Ethylbenzene	2014/12/23	<0.20		ug/L	
			o-Xylene	2014/12/23	<0.20		ug/L	
			p+m-Xylene	2014/12/23	<0.40		ug/L	
			Total Xylenes	2014/12/23	<0.40		ug/L	
			Hexane	2014/12/23	<5.0		ug/L	
			F1 (C6-C10)	2014/12/23	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/12/23	<25		ug/L	
3869805	KLI	Method Blank	o-Terphenyl	2014/12/24		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/12/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/12/24	<200		ug/L	
3865219	SLM	RPD [YX3184-04]	1,2-Dichloroethane	2014/12/20	NC		%	30
			Ethylene Dibromide	2014/12/20	NC		%	30
			Methyl t-butyl ether (MTBE)	2014/12/20	1.9		%	30
3869805	KLI	RPD [YX3184-02]	F2 (C10-C16 Hydrocarbons)	2014/12/24	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/12/24	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/12/24	NC		%	30
3865219	SLM	Matrix Spike [YX3183-04]	4-Bromofluorobenzene	2014/12/20		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/20		98	%	70 - 130
			D8-Toluene	2014/12/20		100	%	70 - 130
			1,2-Dichloroethane	2014/12/20		95	%	70 - 130
			Ethylene Dibromide	2014/12/20		102	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/20		93	%	70 - 130
3869805	KLI	Matrix Spike [YX3183-02]	o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		104	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		105	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/24		104	%	50 - 130
3865219	SLM	LCS	4-Bromofluorobenzene	2014/12/19		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	70 - 130
			D8-Toluene	2014/12/19		101	%	70 - 130
			1,2-Dichloroethane	2014/12/19		88	%	70 - 130
			Ethylene Dibromide	2014/12/19		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/19		86	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3866045	ADA	LCS	Dissolved Arsenic (As)	2014/12/22		101	%	80 - 120
			Dissolved Barium (Ba)	2014/12/22		103	%	80 - 120
			Dissolved Chromium (Cr)	2014/12/22		101	%	80 - 120
			Dissolved Copper (Cu)	2014/12/22		101	%	80 - 120
			Dissolved Lead (Pb)	2014/12/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2014/12/22		99	%	80 - 120
3869167	AAI	LCS	1,4-Difluorobenzene	2014/12/23		99	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		104	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23		93	%	70 - 130
			Toluene	2014/12/23		94	%	70 - 130
			Ethylbenzene	2014/12/23		101	%	70 - 130
			o-Xylene	2014/12/23		103	%	70 - 130
			p+m-Xylene	2014/12/23		93	%	70 - 130
			Hexane	2014/12/23		77	%	70 - 130
			F1 (C6-C10)	2014/12/23		88	%	70 - 130
3869805	KLI	LCS	o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		107	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/24		103	%	60 - 130

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9466
Report Date: 2015/01/26

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496340-03-01

496340

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1/BTEX	F2-F4	VOC	LEAD	VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE	n-hexane	METALS (6) arsenic, barium, chromium, copper, lead, zinc
1	BH-306	✓				12	2014/12/15	12:55	Y	N	✓	✓	✓	✓	✓	✓	
2	BH-309	✓				12	2014/12/15	14:05	Y	N	✓	✓	✓		✓	✓	✓
3	DUP-04	✓				12	2014/12/15	14:05	Y	N	✓	✓	✓		✓	✓	✓
4							YYYY/MM/DD	HH:MM									
5							YYYY/MM/DD	HH:MM									
6							YYYY/MM/DD	HH:MM									
7							YYYY/MM/DD	HH:MM									
8							YYYY/MM/DD	HH:MM									
9							YYYY/MM/DD	HH:MM									
10							YYYY/MM/DD	HH:MM									

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
- [X] REG 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
  (Please indicate which Reg. version and if RSC required)
- [ ] ODWS [ ] PWQO
- [ ] Other

I/C/C MED/FINE

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOC

ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
- Standard (5 days) [X]
- Rush (3 days) [ ]
- (2 days) [ ]
- (1 day) [ ]
- (same day) [ ]

Date Required

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT	✓			0	0	-2	PRESENT							PRESENT						
INTACT	✓						INTACT							INTACT						

LAB USE ONLY
MAXXAM JOB # B4N9466

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	THEO MOSHONAS printed name	2014/12/16 YYYY/MM/DD	17:00 HH:MM	1. signature	FANG WANG printed name	2014/12/17 YYYY/MM/DD	17:55 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

SAMPLES
LABELED BY: HG1
VERIFIED BY: FW

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/15

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9466*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

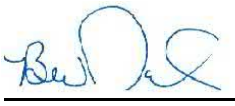
	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 
Review Date: *2015/01/07*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496340-01-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273070
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9487
Received: 2014/12/17, 17:55

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020 m
Volatile Organic Compounds in Water	3	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key

Kudrat Bajwa
29 Dec 2014 09:45:11 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN WATER (WATER)

Maxxam ID		YX3294	YX3294	YX3295	YX3296		
Sampling Date		2014/12/15 07:45	2014/12/15 07:45	2014/12/15 08:35	2014/12/15 09:35		
COC Number		496340-01-01	496340-01-01	496340-01-01	496340-01-01		
	Units	**BH-308**	**BH-308 Lab-Dup**	**BH-305**	**BH-303**	**RDL**	**QC Batch**
Benzene	ug/L	2.4	2.2	<0.20	<0.20	0.20	3869167
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3869167
Ethylbenzene	ug/L	1.3	1.4	<0.20	<0.20	0.20	3869167
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3869167
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	3869167
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	3869167
Hexane	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	3869167
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	3869167
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	3869167
F2 (C10-C16 Hydrocarbons)	ug/L	<100		<100	<100	100	3869805
F3 (C16-C34 Hydrocarbons)	ug/L	<200		<200	<200	200	3869805
F4 (C34-C50 Hydrocarbons)	ug/L	<200		<200	<200	200	3869805
Reached Baseline at C50	ug/L	Yes		Yes	Yes		3869805
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	95		94	93		3869805
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	102	103	102		3869167
4-Bromofluorobenzene	%	103	103	103	102		3869167
D10-Ethylbenzene	%	98	97	102	97		3869167
D4-1,2-Dichloroethane	%	92	92	91	92		3869167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		YX3294		YX3295	YX3296		
Sampling Date		2014/12/15 07:45		2014/12/15 08:35	2014/12/15 09:35		
COC Number		496340-01-01		496340-01-01	496340-01-01		
	Units	**BH-308**	**RDL**	**BH-305**	**BH-303**	**RDL**	**QC Batch**
Dissolved Arsenic (As)	ug/L	<1.0	1.0	<1.0	<1.0	1.0	3866045
Dissolved Barium (Ba)	ug/L	330	2.0	410	200	2.0	3866045
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	<5.0	<5.0	5.0	3866045
Dissolved Copper (Cu)	ug/L	<5.0	5.0	<1.0	1.4	1.0	3866045
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<0.50	<0.50	0.50	3866045
Dissolved Zinc (Zn)	ug/L	6.4	5.0	<5.0	<5.0	5.0	3866045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		YX3294	YX3295	YX3296		
Sampling Date		2014/12/15 07:45	2014/12/15 08:35	2014/12/15 09:35		
COC Number		496340-01-01	496340-01-01	496340-01-01		
	Units	**BH-308**	**BH-305**	**BH-303**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug/L		<0.50		0.50	3865219
1,1-Dichloroethane	ug/L		<0.10		0.10	3865219
1,2-Dichloroethane	ug/L	<0.20	<0.20	<0.20	0.20	3865219
1,1-Dichloroethylene	ug/L		<0.10		0.10	3865219
cis-1,2-Dichloroethylene	ug/L		<0.10		0.10	3865219
trans-1,2-Dichloroethylene	ug/L		<0.10		0.10	3865219
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	0.20	3865219
Methyl t-butyl ether (MTBE)	ug/L	<0.20	<0.20	<0.20	0.20	3865219
Tetrachloroethylene	ug/L		<0.10		0.10	3865219
1,1,1-Trichloroethane	ug/L		<0.10		0.10	3865219
1,1,2-Trichloroethane	ug/L		<0.20		0.20	3865219
Trichloroethylene	ug/L		<0.10		0.10	3865219
Vinyl Chloride	ug/L		<0.20		0.20	3865219
Trichlorofluoromethane (FREON 11)	ug/L		<0.20		0.20	3865219
Instrument Surrogate Recovery (%)						
4-Bromofluorobenzene	%	98	95	96		3865219
D4-1,2-Dichloroethane	%	105	103	105		3865219
D8-Toluene	%	98	97	97		3865219

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3294
Sample ID: BH-308
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam ID: YX3294 Dup
Sample ID: BH-308
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/23	Abdikarim Ali

Maxxam ID: YX3295
Sample ID: BH-305
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam ID: YX3296
Sample ID: BH-303
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-0.3°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865219	SLM	Method Blank	4-Bromofluorobenzene	2014/12/19		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		104	%	70 - 130
			D8-Toluene	2014/12/19		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/12/19	<0.50		ug/L	
			1,1-Dichloroethane	2014/12/19	<0.10		ug/L	
			1,2-Dichloroethane	2014/12/19	<0.20		ug/L	
			1,1-Dichloroethylene	2014/12/19	<0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/12/19	<0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/12/19	<0.10		ug/L	
			Ethylene Dibromide	2014/12/19	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.20		ug/L	
			Tetrachloroethylene	2014/12/19	<0.10		ug/L	
			1,1,1-Trichloroethane	2014/12/19	<0.10		ug/L	
			1,1,2-Trichloroethane	2014/12/19	<0.20		ug/L	
			Trichloroethylene	2014/12/19	<0.10		ug/L	
			Vinyl Chloride	2014/12/19	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/12/19	<0.20		ug/L	
3866045	ADA	Method Blank	Dissolved Arsenic (As)	2014/12/22	<1.0		ug/L	
			Dissolved Barium (Ba)	2014/12/22	<2.0		ug/L	
			Dissolved Chromium (Cr)	2014/12/22	<5.0		ug/L	
			Dissolved Copper (Cu)	2014/12/22	<1.0		ug/L	
			Dissolved Lead (Pb)	2014/12/22	<0.50		ug/L	
			Dissolved Zinc (Zn)	2014/12/22	<5.0		ug/L	
3869167	AAI	Method Blank	1,4-Difluorobenzene	2014/12/23		100	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		103	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23	<0.20		ug/L	
			Toluene	2014/12/23	<0.20		ug/L	
			Ethylbenzene	2014/12/23	<0.20		ug/L	
			o-Xylene	2014/12/23	<0.20		ug/L	
			p+m-Xylene	2014/12/23	<0.40		ug/L	
			Total Xylenes	2014/12/23	<0.40		ug/L	
			Hexane	2014/12/23	<5.0		ug/L	
			F1 (C6-C10)	2014/12/23	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/12/23	<25		ug/L	
3869805	KLI	Method Blank	o-Terphenyl	2014/12/24		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/12/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/12/24	<200		ug/L	
3869167	AAI	RPD [YX3294-05]	Benzene	2014/12/23	7.2		%	30
			Toluene	2014/12/23	NC		%	30
			Ethylbenzene	2014/12/23	0.59		%	30
			o-Xylene	2014/12/23	NC		%	30
			p+m-Xylene	2014/12/23	NC		%	30
			Total Xylenes	2014/12/23	NC		%	30
			Hexane	2014/12/23	NC		%	30
			F1 (C6-C10)	2014/12/23	NC		%	30
			F1 (C6-C10) - BTEX	2014/12/23	NC		%	30
3869167	AAI	Matrix Spike [YX3294-05]	1,4-Difluorobenzene	2014/12/23		102	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		102	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			D10-Ethylbenzene	2014/12/23		97	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		91	%	70 - 130
			Benzene	2014/12/23		92	%	70 - 130
			Toluene	2014/12/23		99	%	70 - 130
			Ethylbenzene	2014/12/23		105	%	70 - 130
			o-Xylene	2014/12/23		108	%	70 - 130
			p+m-Xylene	2014/12/23		100	%	70 - 130
			Hexane	2014/12/23		89	%	70 - 130
			F1 (C6-C10)	2014/12/23		71	%	70 - 130
3865219	SLM	LCS	4-Bromofluorobenzene	2014/12/19		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	70 - 130
			D8-Toluene	2014/12/19		101	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/12/19		83	%	60 - 140
			1,1-Dichloroethane	2014/12/19		90	%	70 - 130
			1,2-Dichloroethane	2014/12/19		88	%	70 - 130
			1,1-Dichloroethylene	2014/12/19		92	%	70 - 130
			cis-1,2-Dichloroethylene	2014/12/19		93	%	70 - 130
			trans-1,2-Dichloroethylene	2014/12/19		90	%	70 - 130
			Ethylene Dibromide	2014/12/19		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/19		86	%	70 - 130
			Tetrachloroethylene	2014/12/19		93	%	70 - 130
			1,1,1-Trichloroethane	2014/12/19		90	%	70 - 130
			1,1,2-Trichloroethane	2014/12/19		95	%	70 - 130
			Trichloroethylene	2014/12/19		93	%	70 - 130
			Vinyl Chloride	2014/12/19		79	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/12/19		89	%	70 - 130
3866045	ADA	LCS	Dissolved Arsenic (As)	2014/12/22		101	%	80 - 120
			Dissolved Barium (Ba)	2014/12/22		103	%	80 - 120
			Dissolved Chromium (Cr)	2014/12/22		101	%	80 - 120
			Dissolved Copper (Cu)	2014/12/22		101	%	80 - 120
			Dissolved Lead (Pb)	2014/12/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2014/12/22		99	%	80 - 120
3869167	AAI	LCS	1,4-Difluorobenzene	2014/12/23		99	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		104	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23		93	%	70 - 130
			Toluene	2014/12/23		94	%	70 - 130
			Ethylbenzene	2014/12/23		101	%	70 - 130
			o-Xylene	2014/12/23		103	%	70 - 130
			p+m-Xylene	2014/12/23		93	%	70 - 130
			Hexane	2014/12/23		77	%	70 - 130
			F1 (C6-C10)	2014/12/23		88	%	70 - 130
3869805	KLI	LCS	o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		107	%	60 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			F4 (C34-C50 Hydrocarbons)	2014/12/24		103	%	60 - 130

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9487
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496340-01-01

496340

INVOICE INFORMATION	REPORT INFORMATION
Company Name:Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name:Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1/BTEX	F2-F4	VOC	LEAD		VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE		n-hexane			METALS (6) (arsenic, boron, copper, chromium, zinc, lead)					VOC (14): ethylene dibromide, 1,2-dichloroethane, 1,1-dichloroethane, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, vinyl chloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, MTBE, Freon-11, Freon-12				
1	BH-308	✓				12	2014/12/15	07:45	Y	N	✓	✓				✓		✓			✓									
2	BH-305	✓				12	2014/12/15	08:35	Y	N	✓	✓						✓			✓				✓					
3	BH-303	✓				12	2014/12/15	09:35	Y	N	✓	✓				✓		✓			✓									
4							YYYY/MM/DD	HH:MM																						
5							YYYY/MM/DD	HH:MM																						
6							YYYY/MM/DD	HH:MM																						
7							YYYY/MM/DD	HH:MM																						
8							YYYY/MM/DD	HH:MM																						
9							YYYY/MM/DD	HH:MM																						
10							YYYY/MM/DD	HH:MM																						

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☑ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO
☐ Other
I/C/C MED/FINE

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOR
TCE -YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT	✓			0	0	-1	PRESENT							PRESENT						
INTACT	✓						INTACT							INTACT						

LAB USE ONLY
MAXXAM JOB # B4N9487
SAMPLES
LABELED BY: HG1 VERIFIED BY: FW

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	THEO MOSHONAS printed name	2014/12/16 YYYY/MM/DD	17:00 HH:MM	1. signature	RACHEL DEVLIN printed name	2014/12/17 YYYY/MM/DD	17:55 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/15

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9487*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

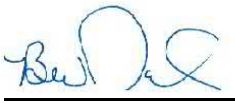
	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*
If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 
Review Date: *2015/01/07*
Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496340-02-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273072
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9500
Received: 2014/12/17, 17:55

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020 m
Volatile Organic Compounds in Water	2	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key

Kudrat Bajwa
29 Dec 2014 09:43:13 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN WATER (WATER)

Maxxam ID		YX3349	YX3350		
Sampling Date		2014/12/15 10:50	2014/12/15 11:45		
COC Number		496340-02-01	496340-02-01		
	Units	**BH-302**	**BH-301**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	3869167
Toluene	ug/L	<0.20	<0.20	0.20	3869167
Ethylbenzene	ug/L	<0.20	<0.20	0.20	3869167
o-Xylene	ug/L	<0.20	0.85	0.20	3869167
p+m-Xylene	ug/L	<0.40	0.52	0.40	3869167
Total Xylenes	ug/L	<0.40	1.4	0.40	3869167
Hexane	ug/L	<5.0	<5.0	5.0	3869167
F1 (C6-C10)	ug/L	<25	<25	25	3869167
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	3869167
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	3869805
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	3869805
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	3869805
Reached Baseline at C50	ug/L	Yes	Yes		3869805
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	97	98		3869805
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	101	101		3869167
4-Bromofluorobenzene	%	101	102		3869167
D10-Ethylbenzene	%	96	96		3869167
D4-1,2-Dichloroethane	%	92	92		3869167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		YX3349	YX3350		
Sampling Date		2014/12/15 10:50	2014/12/15 11:45		
COC Number		496340-02-01	496340-02-01		
	Units	**BH-302**	**BH-301**	**RDL**	**QC Batch**
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	1.0	3866045
Dissolved Barium (Ba)	ug/L	120	150	2.0	3866045
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	3866045
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	2.0	3866045
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	3866045
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	3866045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		YX3349	YX3350		
Sampling Date		2014/12/15 10:50	2014/12/15 11:45		
COC Number		496340-02-01	496340-02-01		
	Units	**BH-302**	**BH-301**	**RDL**	**QC Batch**
1,2-Dichloroethane	ug/L	<0.20	<0.20	0.20	3865219
Ethylene Dibromide	ug/L	<0.20	<0.20	0.20	3865219
Methyl t-butyl ether (MTBE)	ug/L	<0.20	<0.20	0.20	3865219
Instrument Surrogate Recovery (%)					
4-Bromofluorobenzene	%	95	96		3865219
D4-1,2-Dichloroethane	%	103	102		3865219
D8-Toluene	%	98	99		3865219

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3349
Sample ID: BH-302
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam ID: YX3350
Sample ID: BH-301
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.7°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865219	SLM	Method Blank	4-Bromofluorobenzene	2014/12/19		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		104	%	70 - 130
			D8-Toluene	2014/12/19		97	%	70 - 130
			1,2-Dichloroethane	2014/12/19	<0.20		ug/L	
			Ethylene Dibromide	2014/12/19	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.20		ug/L	
3866045	ADA	Method Blank	Dissolved Arsenic (As)	2014/12/22	<1.0		ug/L	
			Dissolved Barium (Ba)	2014/12/22	<2.0		ug/L	
			Dissolved Chromium (Cr)	2014/12/22	<5.0		ug/L	
			Dissolved Copper (Cu)	2014/12/22	<1.0		ug/L	
			Dissolved Lead (Pb)	2014/12/22	<0.50		ug/L	
			Dissolved Zinc (Zn)	2014/12/22	<5.0		ug/L	
3869167	AAI	Method Blank	1,4-Difluorobenzene	2014/12/23		100	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		103	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23	<0.20		ug/L	
			Toluene	2014/12/23	<0.20		ug/L	
			Ethylbenzene	2014/12/23	<0.20		ug/L	
			o-Xylene	2014/12/23	<0.20		ug/L	
			p+m-Xylene	2014/12/23	<0.40		ug/L	
			Total Xylenes	2014/12/23	<0.40		ug/L	
			Hexane	2014/12/23	<5.0		ug/L	
			F1 (C6-C10)	2014/12/23	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/12/23	<25		ug/L	
3869805	KLI	Method Blank	o-Terphenyl	2014/12/24		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/12/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/12/24	<200		ug/L	
3865219	SLM	LCS	4-Bromofluorobenzene	2014/12/19		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	70 - 130
			D8-Toluene	2014/12/19		101	%	70 - 130
			1,2-Dichloroethane	2014/12/19		88	%	70 - 130
			Ethylene Dibromide	2014/12/19		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/19		86	%	70 - 130
3866045	ADA	LCS	Dissolved Arsenic (As)	2014/12/22		101	%	80 - 120
			Dissolved Barium (Ba)	2014/12/22		103	%	80 - 120
			Dissolved Chromium (Cr)	2014/12/22		101	%	80 - 120
			Dissolved Copper (Cu)	2014/12/22		101	%	80 - 120
			Dissolved Lead (Pb)	2014/12/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2014/12/22		99	%	80 - 120
3869167	AAI	LCS	1,4-Difluorobenzene	2014/12/23		99	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		104	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23		93	%	70 - 130
			Toluene	2014/12/23		94	%	70 - 130
			Ethylbenzene	2014/12/23		101	%	70 - 130
			o-Xylene	2014/12/23		103	%	70 - 130
			p+m-Xylene	2014/12/23		93	%	70 - 130
			Hexane	2014/12/23		77	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3869805	KLI	LCS	F1 (C6-C10)	2014/12/23		88	%	70 - 130
			o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		107	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/24		103	%	60 - 130

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9500
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 496340-02-01

496340

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1/BTEX	F2-F4	VOC	LEAD		n-hexane			METALS (6) arsenic, barium, chromium, copper, lead, zinc		VOC (3): ethylene dibromide, 1,2-dichloroethane, MTBE									
1	BH-302	✓				12	2014/12/15	10:50	Y	N	✓	✓				✓			✓		✓									
2	BH-301	✓				12	2014/12/15	11:45	Y	N	✓	✓				✓			✓		✓									
3							YYYY/MM/DD	HH:MM																						
4							YYYY/MM/DD	HH:MM																						
5							YYYY/MM/DD	HH:MM																						
6							YYYY/MM/DD	HH:MM																						
7							YYYY/MM/DD	HH:MM																						
8							YYYY/MM/DD	HH:MM																						
9							YYYY/MM/DD	HH:MM																						
10							YYYY/MM/DD	HH:MM																						

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS ☐ PWQO

☐ Other _____

Y/C MEO/FME

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOC

ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL						
PRESENT	✓			0	0	2
INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL						
PRESENT						
INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL						
PRESENT						
INTACT						

LAB USE ONLY

MAXXAM JOB # B4N9500

SAMPLES

RELINQUISHED BY:	printed name	DATE:	TIME (24 HR)	RECEIVED BY:	printed name	DATE:	TIME (24 HR)
1. signature	THEO MOSHONAS	2014/12/16	17:00	1. signature	FANG WANG	2014/12/17	17:55
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

LABELED BY: HGL VERIFIED BY: FW

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/15

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9500*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

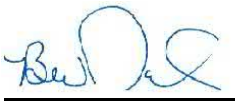
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 

Review Date: *2015/01/07*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496340-04-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273074
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9503
Received: 2014/12/17, 17:55

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	1	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020 m
Volatile Organic Compounds in Water	1	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key

Kudrat Bajwa
29 Dec 2014 09:38:10 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN WATER (WATER)

Maxxam ID		YX3356		
Sampling Date		2014/12/15 14:10		
COC Number		496340-04-01		
	Units	**FIELD BLANK-02**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	0.20	3869167
Toluene	ug/L	<0.20	0.20	3869167
Ethylbenzene	ug/L	<0.20	0.20	3869167
o-Xylene	ug/L	<0.20	0.20	3869167
p+m-Xylene	ug/L	<0.40	0.40	3869167
Total Xylenes	ug/L	<0.40	0.40	3869167
Hexane	ug/L	<5.0	5.0	3869167
F1 (C6-C10)	ug/L	<25	25	3869167
F1 (C6-C10) - BTEX	ug/L	<25	25	3869167
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	3869805
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	3869805
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	3869805
Reached Baseline at C50	ug/L	Yes		3869805
Extraction Surrogate Recovery (%)				
o-Terphenyl	%	97		3869805
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	101		3869167
4-Bromofluorobenzene	%	103		3869167
D10-Ethylbenzene	%	98		3869167
D4-1,2-Dichloroethane	%	92		3869167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		YX3356		
Sampling Date		2014/12/15 14:10		
COC Number		496340-04-01		
	Units	**FIELD BLANK-02**	**RDL**	**QC Batch**
Dissolved Arsenic (As)	ug/L	<1.0	1.0	3866045
Dissolved Barium (Ba)	ug/L	<2.0	2.0	3866045
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	3866045
Dissolved Copper (Cu)	ug/L	<1.0	1.0	3866045
Dissolved Lead (Pb)	ug/L	<0.50	0.50	3866045
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	3866045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		YX3356		
Sampling Date		2014/12/15 14:10		
COC Number		496340-04-01		
	Units	**FIELD BLANK-02**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	0.50	3865219
1,1-Dichloroethane	ug/L	<0.10	0.10	3865219
1,2-Dichloroethane	ug/L	<0.20	0.20	3865219
1,1-Dichloroethylene	ug/L	<0.10	0.10	3865219
cis-1,2-Dichloroethylene	ug/L	<0.10	0.10	3865219
trans-1,2-Dichloroethylene	ug/L	<0.10	0.10	3865219
Ethylene Dibromide	ug/L	<0.20	0.20	3865219
Methyl t-butyl ether (MTBE)	ug/L	<0.20	0.20	3865219
Tetrachloroethylene	ug/L	<0.10	0.10	3865219
1,1,1-Trichloroethane	ug/L	<0.10	0.10	3865219
1,1,2-Trichloroethane	ug/L	<0.20	0.20	3865219
Trichloroethylene	ug/L	<0.10	0.10	3865219
Vinyl Chloride	ug/L	<0.20	0.20	3865219
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	0.20	3865219
Instrument Surrogate Recovery (%)				
4-Bromofluorobenzene	%	95		3865219
D4-1,2-Dichloroethane	%	104		3865219
D8-Toluene	%	97		3865219

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3356
Sample ID: FIELD BLANK-02
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.7°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865219	SLM	Method Blank	4-Bromofluorobenzene	2014/12/19		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		104	%	70 - 130
			D8-Toluene	2014/12/19		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/12/19	<0.50		ug/L	
			1,1-Dichloroethane	2014/12/19	<0.10		ug/L	
			1,2-Dichloroethane	2014/12/19	<0.20		ug/L	
			1,1-Dichloroethylene	2014/12/19	<0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/12/19	<0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/12/19	<0.10		ug/L	
			Ethylene Dibromide	2014/12/19	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.20		ug/L	
			Tetrachloroethylene	2014/12/19	<0.10		ug/L	
			1,1,1-Trichloroethane	2014/12/19	<0.10		ug/L	
			1,1,2-Trichloroethane	2014/12/19	<0.20		ug/L	
			Trichloroethylene	2014/12/19	<0.10		ug/L	
			Vinyl Chloride	2014/12/19	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/12/19	<0.20		ug/L	
3866045	ADA	Method Blank	Dissolved Arsenic (As)	2014/12/22	<1.0		ug/L	
			Dissolved Barium (Ba)	2014/12/22	<2.0		ug/L	
			Dissolved Chromium (Cr)	2014/12/22	<5.0		ug/L	
			Dissolved Copper (Cu)	2014/12/22	<1.0		ug/L	
			Dissolved Lead (Pb)	2014/12/22	<0.50		ug/L	
			Dissolved Zinc (Zn)	2014/12/22	<5.0		ug/L	
3869167	AAI	Method Blank	1,4-Difluorobenzene	2014/12/23		100	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		103	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23	<0.20		ug/L	
			Toluene	2014/12/23	<0.20		ug/L	
			Ethylbenzene	2014/12/23	<0.20		ug/L	
			o-Xylene	2014/12/23	<0.20		ug/L	
			p+m-Xylene	2014/12/23	<0.40		ug/L	
			Total Xylenes	2014/12/23	<0.40		ug/L	
			Hexane	2014/12/23	<5.0		ug/L	
			F1 (C6-C10)	2014/12/23	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/12/23	<25		ug/L	
3869805	KLI	Method Blank	o-Terphenyl	2014/12/24		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/12/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/12/24	<200		ug/L	
3865219	SLM	LCS	4-Bromofluorobenzene	2014/12/19		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	70 - 130
			D8-Toluene	2014/12/19		101	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/12/19		83	%	60 - 140
			1,1-Dichloroethane	2014/12/19		90	%	70 - 130
			1,2-Dichloroethane	2014/12/19		88	%	70 - 130
			1,1-Dichloroethylene	2014/12/19		92	%	70 - 130
			cis-1,2-Dichloroethylene	2014/12/19		93	%	70 - 130
			trans-1,2-Dichloroethylene	2014/12/19		90	%	70 - 130
			Ethylene Dibromide	2014/12/19		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/19		86	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Tetrachloroethylene	2014/12/19		93	%	70 - 130
			1,1,1-Trichloroethane	2014/12/19		90	%	70 - 130
			1,1,2-Trichloroethane	2014/12/19		95	%	70 - 130
			Trichloroethylene	2014/12/19		93	%	70 - 130
			Vinyl Chloride	2014/12/19		79	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/12/19		89	%	70 - 130
3866045	ADA	LCS	Dissolved Arsenic (As)	2014/12/22		101	%	80 - 120
			Dissolved Barium (Ba)	2014/12/22		103	%	80 - 120
			Dissolved Chromium (Cr)	2014/12/22		101	%	80 - 120
			Dissolved Copper (Cu)	2014/12/22		101	%	80 - 120
			Dissolved Lead (Pb)	2014/12/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2014/12/22		99	%	80 - 120
3869167	AAI	LCS	1,4-Difluorobenzene	2014/12/23		99	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		104	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23		93	%	70 - 130
			Toluene	2014/12/23		94	%	70 - 130
			Ethylbenzene	2014/12/23		101	%	70 - 130
			o-Xylene	2014/12/23		103	%	70 - 130
			p+m-Xylene	2014/12/23		93	%	70 - 130
			Hexane	2014/12/23		77	%	70 - 130
			F1 (C6-C10)	2014/12/23		88	%	70 - 130
3869805	KLI	LCS	o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		107	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/24		103	%	60 - 130

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9503
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 496340-04-01

496340

INVOICE INFORMATION	REPORT INFORMATION
Company Name:Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name:Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1/BTEX	F2-F4	VOC	LEAD		n-hexane			METALS (6) (arsenic, barium, chromium, copper, nickel, zinc)			VOC (14): ethylene dibromide, 1,2-dichloroethane, 1,1-dichloroethane, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, vinyl chloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, MTBE, Freon-11, Freon-12								
1	FIELD BLANK-02				✓	12	2014/12/15	14:10	N	N	✓	✓				✓			✓			✓								
2							YYYY/MM/DD	HH:MM																						
3							YYYY/MM/DD	HH:MM																						
4							YYYY/MM/DD	HH:MM																						
5							YYYY/MM/DD	HH:MM																						
6							YYYY/MM/DD	HH:MM																						
7							YYYY/MM/DD	HH:MM																						
8							YYYY/MM/DD	HH:MM																						
9							YYYY/MM/DD	HH:MM																						
10							YYYY/MM/DD	HH:MM																						

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS ☐ PWQO

☐ Other

V/C/C MGO/FWE

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOC

ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID: 1							COOLER ID:							COOLER ID:						
CUSTODY SEAL	YES	NO	TEMP	0	0	2	CUSTODY SEAL	YES	NO	TEMP				CUSTODY SEAL	YES	NO	TEMP			
PRESENT	✓			1	2	3	PRESENT				1	2	3	PRESENT				1	2	3
INTACT	✓						INTACT							INTACT						

LAB USE ONLY
MAXXAM JOB # B4N 9503
SAMPLES

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature: THEO MOSHONAS	THEO MOSHONAS	2014/12/16	17:00	1. signature: FANG WANG	FANG WANG	2014/12/17	17:55
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

LABELED BY: HG1 VERIFIED BY: FW

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/15

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9503*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

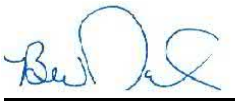
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 

Review Date: *2015/01/07*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410259930
Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3
Your C.O.C. #: 496340-05-01

Attention:Holly Losignore

Parsons
3715 Laird Road
Suite 100
Mississauga, ON
L5L 0A3

Report Date: 2014/12/29
Report #: R3273075
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9508
Received: 2014/12/17, 17:55

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	1	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020 m
Volatile Organic Compounds in Water	1	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key

Kudrat Bajwa
29 Dec 2014 10:13:40 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

HBTEX/F1-F4 PET. HYDROCARBONS IN WATER (WATER)

Maxxam ID		YX3375		
Sampling Date		2014/12/15 14:25		
COC Number		496340-05-01		
	Units	**TRIP BLANK-02**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	0.20	3869167
Toluene	ug/L	<0.20	0.20	3869167
Ethylbenzene	ug/L	<0.20	0.20	3869167
o-Xylene	ug/L	<0.20	0.20	3869167
p+m-Xylene	ug/L	<0.40	0.40	3869167
Total Xylenes	ug/L	<0.40	0.40	3869167
Hexane	ug/L	<5.0	5.0	3869167
F1 (C6-C10)	ug/L	<25	25	3869167
F1 (C6-C10) - BTEX	ug/L	<25	25	3869167
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	3869805
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	3869805
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	3869805
Reached Baseline at C50	ug/L	Yes		3869805
Extraction Surrogate Recovery (%)				
o-Terphenyl	%	97		3869805
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	101		3869167
4-Bromofluorobenzene	%	101		3869167
D10-Ethylbenzene	%	96		3869167
D4-1,2-Dichloroethane	%	92		3869167

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		YX3375		
Sampling Date		2014/12/15 14:25		
COC Number		496340-05-01		
	Units	**TRIP BLANK-02**	**RDL**	**QC Batch**
Dissolved Arsenic (As)	ug/L	<1.0	1.0	3866045
Dissolved Barium (Ba)	ug/L	<2.0	2.0	3866045
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	3866045
Dissolved Copper (Cu)	ug/L	<1.0	1.0	3866045
Dissolved Lead (Pb)	ug/L	<0.50	0.50	3866045
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	3866045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		YX3375		
Sampling Date		2014/12/15 14:25		
COC Number		496340-05-01		
	Units	**TRIP BLANK-02**	**RDL**	**QC Batch**
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	0.50	3865219
1,1-Dichloroethane	ug/L	<0.10	0.10	3865219
1,2-Dichloroethane	ug/L	<0.20	0.20	3865219
1,1-Dichloroethylene	ug/L	<0.10	0.10	3865219
cis-1,2-Dichloroethylene	ug/L	<0.10	0.10	3865219
trans-1,2-Dichloroethylene	ug/L	<0.10	0.10	3865219
Ethylene Dibromide	ug/L	<0.20	0.20	3865219
Methyl t-butyl ether (MTBE)	ug/L	<0.20	0.20	3865219
Tetrachloroethylene	ug/L	<0.10	0.10	3865219
1,1,1-Trichloroethane	ug/L	<0.10	0.10	3865219
1,1,2-Trichloroethane	ug/L	<0.20	0.20	3865219
Trichloroethylene	ug/L	<0.10	0.10	3865219
Vinyl Chloride	ug/L	<0.20	0.20	3865219
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	0.20	3865219
Instrument Surrogate Recovery (%)				
4-Bromofluorobenzene	%	95		3865219
D4-1,2-Dichloroethane	%	103		3865219
D8-Toluene	%	98		3865219

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

TEST SUMMARY

Maxxam ID: YX3375
Sample ID: TRIP BLANK-02
Matrix: Water

Collected: 2014/12/15
Relinquished: 2014/12/16
Received: 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3869167	N/A	2014/12/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3869805	2014/12/23	2014/12/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	3866045	N/A	2014/12/22	Arefa Dabhad
Volatile Organic Compounds in Water	P&T/MS	3865219	N/A	2014/12/20	Sarah Lam

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-0.7°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3865219	SLM	Method Blank	4-Bromofluorobenzene	2014/12/19		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		104	%	70 - 130
			D8-Toluene	2014/12/19		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/12/19	<0.50		ug/L	
			1,1-Dichloroethane	2014/12/19	<0.10		ug/L	
			1,2-Dichloroethane	2014/12/19	<0.20		ug/L	
			1,1-Dichloroethylene	2014/12/19	<0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/12/19	<0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/12/19	<0.10		ug/L	
			Ethylene Dibromide	2014/12/19	<0.20		ug/L	
			Methyl t-butyl ether (MTBE)	2014/12/19	<0.20		ug/L	
			Tetrachloroethylene	2014/12/19	<0.10		ug/L	
			1,1,1-Trichloroethane	2014/12/19	<0.10		ug/L	
			1,1,2-Trichloroethane	2014/12/19	<0.20		ug/L	
			Trichloroethylene	2014/12/19	<0.10		ug/L	
			Vinyl Chloride	2014/12/19	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/12/19	<0.20		ug/L	
3866045	ADA	Method Blank	Dissolved Arsenic (As)	2014/12/22	<1.0		ug/L	
			Dissolved Barium (Ba)	2014/12/22	<2.0		ug/L	
			Dissolved Chromium (Cr)	2014/12/22	<5.0		ug/L	
			Dissolved Copper (Cu)	2014/12/22	<1.0		ug/L	
			Dissolved Lead (Pb)	2014/12/22	<0.50		ug/L	
			Dissolved Zinc (Zn)	2014/12/22	<5.0		ug/L	
3869167	AAI	Method Blank	1,4-Difluorobenzene	2014/12/23		100	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		103	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23	<0.20		ug/L	
			Toluene	2014/12/23	<0.20		ug/L	
			Ethylbenzene	2014/12/23	<0.20		ug/L	
			o-Xylene	2014/12/23	<0.20		ug/L	
			p+m-Xylene	2014/12/23	<0.40		ug/L	
			Total Xylenes	2014/12/23	<0.40		ug/L	
			Hexane	2014/12/23	<5.0		ug/L	
			F1 (C6-C10)	2014/12/23	<25		ug/L	
			F1 (C6-C10) - BTEX	2014/12/23	<25		ug/L	
3869805	KLI	Method Blank	o-Terphenyl	2014/12/24		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/12/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/12/24	<200		ug/L	
3865219	SLM	LCS	4-Bromofluorobenzene	2014/12/19		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/19		98	%	70 - 130
			D8-Toluene	2014/12/19		101	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/12/19		83	%	60 - 140
			1,1-Dichloroethane	2014/12/19		90	%	70 - 130
			1,2-Dichloroethane	2014/12/19		88	%	70 - 130
			1,1-Dichloroethylene	2014/12/19		92	%	70 - 130
			cis-1,2-Dichloroethylene	2014/12/19		93	%	70 - 130
			trans-1,2-Dichloroethylene	2014/12/19		90	%	70 - 130
			Ethylene Dibromide	2014/12/19		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2014/12/19		86	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Tetrachloroethylene	2014/12/19		93	%	70 - 130
			1,1,1-Trichloroethane	2014/12/19		90	%	70 - 130
			1,1,2-Trichloroethane	2014/12/19		95	%	70 - 130
			Trichloroethylene	2014/12/19		93	%	70 - 130
			Vinyl Chloride	2014/12/19		79	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/12/19		89	%	70 - 130
3866045	ADA	LCS	Dissolved Arsenic (As)	2014/12/22		101	%	80 - 120
			Dissolved Barium (Ba)	2014/12/22		103	%	80 - 120
			Dissolved Chromium (Cr)	2014/12/22		101	%	80 - 120
			Dissolved Copper (Cu)	2014/12/22		101	%	80 - 120
			Dissolved Lead (Pb)	2014/12/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2014/12/22		99	%	80 - 120
3869167	AAI	LCS	1,4-Difluorobenzene	2014/12/23		99	%	70 - 130
			4-Bromofluorobenzene	2014/12/23		104	%	70 - 130
			D10-Ethylbenzene	2014/12/23		92	%	70 - 130
			D4-1,2-Dichloroethane	2014/12/23		97	%	70 - 130
			Benzene	2014/12/23		93	%	70 - 130
			Toluene	2014/12/23		94	%	70 - 130
			Ethylbenzene	2014/12/23		101	%	70 - 130
			o-Xylene	2014/12/23		103	%	70 - 130
			p+m-Xylene	2014/12/23		93	%	70 - 130
			Hexane	2014/12/23		77	%	70 - 130
			F1 (C6-C10)	2014/12/23		88	%	70 - 130
3869805	KLI	LCS	o-Terphenyl	2014/12/24		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2014/12/24		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/12/24		107	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/12/24		103	%	60 - 130

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B4N9508
Report Date: 2014/12/29

Parsons
Task Order#: 4410259930, Line Item: 10
Site#: ME.00214
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518.3

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Scientific Services

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 496340-05-01

496340

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Daniel Grenzowski	Contact Name: Holly Losignore
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 3715 Laird Road Suite 100 Mississauga ON L5L 0A3
Email: daniel.grenzowski@esso.ca	Email: Holly.Losignore@parsons.com; labreport@
Phone: (416) 442-5012 x	Phone: (905) 569-4111 x
Sampler Name (Print): THEO MOSHONAS	Consultant Project #: 10-8518.3

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	F1/BTEX	F2-F4	VOC	LEAD		n-hexane			METALS (6) essential boron, uranium, cadmium, copper, lead, zinc		VOC (14): ethylene dibromide, 1,2-dichloroethane, 1,1-dichloroethane, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, vinyl chloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, MTBE, Freon-11, Freon-12							
1	TRIP BLANK-02				✓	6	2014/12/15	14:25	N	N	✓	✓				✓			✓		✓							
2							YYYY/MM/DD	HH:MM																				
3							YYYY/MM/DD	HH:MM																				
4							YYYY/MM/DD	HH:MM																				
5							YYYY/MM/DD	HH:MM																				
6							YYYY/MM/DD	HH:MM																				
7							YYYY/MM/DD	HH:MM																				
8							YYYY/MM/DD	HH:MM																				
9							YYYY/MM/DD	HH:MM																				
10							YYYY/MM/DD	HH:MM																				

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): ME.00214

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410259930-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS ☐ PWQO

☐ Other

SPECIAL INSTRUCTIONS: TEST SAMPLES AS PER TOC

ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	0	0	-2	CUSTODY SEAL	YES	NO	TEMP				CUSTODY SEAL	YES	NO	TEMP			
PRESENT	✓			1	2	3	PRESENT				1	2	3	PRESENT				1	2	3
INTACT	✓						INTACT							INTACT						

LAB USE ONLY
MAXXAM JOB # B4N 9508
SAMPLES
LABELED BY: HG1
VERIFIED BY: FW

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature: Theo Moshonas	printed name: THEO MOSHONAS	YYYY/MM/DD: 2014/12/16	HH:MM: 17:00	1. signature:	printed name: FANG WANG	YYYY/MM/DD: 2014/12/17	HH:MM: 17:55
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.*
1545 Woodroffe Avenue
Location: *Ottawa, Ontario*

Sampling Date: 2014/12/15

Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518.3*

Laboratory Job Number: *B4N9508*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

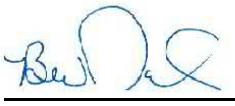
Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature): 

Review Date: *2015/01/07*

Revision Date (if applicable): Revised by (Signature):

APPENDIX D

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

There were no lab or field QA/QC issues identified in this report that need to be discussed in detail.

The soil field QA/QC program consisted of three field duplicate samples for the analysis of one or more of the following parameters: BTEX, PHC fractions F1 to F4, hexane, lead, selected or full suites of PAHs, and selected metals. The program also included one trip blank methanol sample for analysis of BTEX, PHC fraction F1, and VOCs; and one field blank silica sand soil sample for analysis of PAHs and PCBs.

The groundwater field QA/QC program consisted of one field duplicate, one field blank, and one trip blank sample for the analysis of BTEX, PHC fractions F1 to F4, hexane, lead, selected VOCs, and selected metals.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit.

The designated field duplicate RPD alert limits are presented in Tables D-1 to D-3 for soil. All of the RPDs were within acceptable limits.

The soil trip blank data was compared to the alert limits and are presented in Tables D-4 and D-5. All of the results were within the alert limits.

The soil field blank data were compared to the alert limits and are presented in Tables D-6 and D-7. All of the results were within the alert limits.

The designated field duplicate RPD alert limits are presented in Tables D-8 to D-10 for groundwater. All of the RPDs were within acceptable limits.

The water trip blank and field blank data were compared to the alert limits and are presented in Tables D-11 to D-13. All of the results were within the alert limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for soil and/or groundwater samples that were analyzed, and (b) the analysis of method blank, matrix duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. As indicated, no laboratory QA/QC issues were identified. No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE D-1

RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-301-5.3-5.9	RDL	DUP-01 FIELD DUPLICATE BH-301-5.3-5.9	RDL	RPD	BH-304-5.3-5.9	RDL	DUP-02 FIELD DUPLICATE BH-304-5.3-5.9	RDL	RPD	
Maxxam Certificate of Analysis No.	B4N6049V1		B4N6049V1			B4N7072V1		B4N7072V1			RPD ALERT LIMITS (%)[a]
Maxxam Sample ID	YV6418		YV6419			YW2044		YW2045			
Depth (mbgs)	5.3-5.9		5.3-5.9			5.3-5.9		5.3-5.9			
Date Sampled (yyyy/mm/dd)	2014/12/09		2014/12/09			2014/12/10		2014/12/10			
PARAMETERS											
Benzene	<0.020	0.020	<0.020	0.020	NC	<0.020	0.020	<0.020	0.020	NC	100
Toluene	<0.020	0.020	<0.020	0.020	NC	<0.020	0.020	<0.020	0.020	NC	100
Ethylbenzene	<0.020	0.020	<0.020	0.020	NC	0.15	0.020	0.048	0.020	NC	100
Total Xylenes	<0.040	0.040	<0.040	0.040	NC	0.12	0.040	0.11	0.040	NC	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	10	<10	10	NC	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	10	<10	10	NC	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<50	50	<50	50	NC	<50	50	<50	50	NC	100
Petroleum Hydrocarbons F4 (>C34 - C50)	<50	50	<50	50	NC	<50	50	<50	50	NC	100
Hexane	<0.50	0.50	<0.50	0.50	NC	<0.50	0.50	<0.50	0.50	NC	100
Lead	5.4	1.0	2.8	1.0	NC	2.3	1.0	3.5	1.0	NC	100

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-1

RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-306-5.3-5.9	RDL	DUP-03 FIELD DUPLICATE BH-306-5.3-5.9	RDL	RPD	
Maxxam Certificate of Analysis No.	B4N7299V1		B4N7299V1			RPD ALERT LIMITS (%)[a]
Maxxam Sample ID	YW3228		YW3229			
Depth (mbgs)	5.3-5.9		5.3-5.9			
Date Sampled (yyyy/mm/dd)	2014/12/11		2014/12/11			
PARAMETERS						
Benzene	0.030	0.020	0.037	0.020	NC	100
Toluene	<0.020	0.020	<0.020	0.020	NC	100
Ethylbenzene	0.12	0.020	0.16	0.020	29%	100
Total Xylenes	0.12	0.040	0.16	0.040	NC	100
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	10	<10	10	NC	100
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<50	50	<50	50	NC	100
Petroleum Hydrocarbons F4 (>C34 - C50)[d]	<50	50	<50	50	NC	100
Hexane	<0.50	0.50	<0.50	0.50	NC	100
Lead	<5.0	5.0	<5.0	5.0	NC	100

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-2

RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	BH-301-5.3-5.9	RDL	DUP-01 FIELD DUPLICATE BH-301-5.3-5.9	RDL	RPD	BH-304-5.3-5.9	RDL	DUP-02 FIELD DUPLICATE BH-304-5.3-5.9	RDL	RPD	
Maxxam Certificate of Analysis No.	B4N6049V1		B4N6049V1			B4N7072V1		B4N7072V1			RPD ALERT LIMITS (%)[a]
Maxxam Sample ID	YV6418		YV6419			YW2044		YW2045			
Depth (mbgs)	5.3-5.9		5.3-5.9			5.3-5.9		5.3-5.9			
Date Sampled (yyyy/mm/dd)	2014/12/09		2014/12/09			2014/12/10		2014/12/10			
PARAMETERS											
Acenaphthene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Acenaphthylene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Anthracene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Benzo(a)anthracene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Benzo(a)pyrene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Benzo(b/j)fluoranthene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Benzo(g,h,i)perylene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Benzo(k)fluoranthene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Chrysene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Dibenz(a,h)anthracene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Fluoranthene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Fluorene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
Indeno(1,2,3-cd)pyrene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100
1-Methylnaphthalene	<0.0050	0.0050	<0.0050	0.0050	NC	0.035	0.0050	0.023	0.0050	NC	100
2-Methylnaphthalene	<0.0050	0.0050	<0.0050	0.0050	NC	0.020	0.0050	0.010	0.0050	NC	100
Total Methylnaphthalenes	<0.0071	0.0071	<0.0071	0.0071	NC	0.056	0.0071	0.033	0.0071	NC	100
Naphthalene	<0.0050	0.0050	<0.0050	0.0050	NC	0.0056	0.0050	<0.0050	0.0050	NC	100
Phenanthrene	<0.0050	0.0050	<0.0050	0.0050	NC	0.0079	0.0050	0.0063	0.0050	NC	100
Pyrene	<0.0050	0.0050	<0.0050	0.0050	NC	<0.0050	0.0050	<0.0050	0.0050	NC	100

a - Alert limits used for field duplicate samples
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-2

RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	BH-306-5.3-5.9	RDL	DUP-03 FIELD DUPLICATE BH-306-5.3-5.9	RDL	RPD	
Maxxam Certificate of Analysis No.	B4N7299V1		B4N7299V1			RPD ALERT LIMITS (%)[a]
Maxxam Sample ID	YW3228		YW3229			
Depth (mbgs)	5.3-5.9		5.3-5.9			
Date Sampled (yyyy/mm/dd)	2014/12/11		2014/12/11			
PARAMETERS						
Acenaphthene	<0.0050	0.0050	<0.0050	0.0050	NC	100
Acenaphthylene	<0.0050	0.0050	<0.0050	0.0050	NC	100
Anthracene	<0.0050	0.0050	<0.0050	0.0050	NC	100
Benzo(a)anthracene	-	NA	-	NA	NA	100
Benzo(a)pyrene	-	NA	-	NA	NA	100
Benzo(b/j)fluoranthene	-	NA	-	NA	NA	100
Benzo(g,h,i)perylene	-	NA	-	NA	NA	100
Benzo(k)fluoranthene	-	NA	-	NA	NA	100
Chrysene	-	NA	-	NA	NA	100
Dibenz(a,h)anthracene	-	NA	-	NA	NA	100
Fluoranthene	<0.0050	0.0050	<0.0050	0.0050	NC	100
Fluorene	<0.0050	0.0050	<0.0050	0.0050	NC	100
Indeno(1,2,3-cd)pyrene	-	NA	-	NA	NA	100
1-Methylnaphthalene	0.015	0.0050	0.017	0.0050	NC	100
2-Methylnaphthalene	0.0061	0.0050	0.0076	0.0050	NC	100
Total Methylnaphthalenes	0.021	0.0071	0.024	0.0071	NC	100
Naphthalene	<0.0050	0.0050	0.0051	0.0050	NC	100
Phenanthrene	<0.0050	0.0050	<0.0050	0.0050	NC	100
Pyrene	-	NA	-	NA	NA	100

a - Alert limits used for field duplicate samples
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-3

RELATIVE PERCENT DIFFERENCE CALCULATIONS - SOIL FIELD DUPLICATE SAMPLES
SELECTED METALS

SAMPLE LOCATIONS	BH-301-5.3-5.9	RDL	DUP-01 FIELD DUPLICATE BH-301-5.3-5.9	RDL	RPD	BH-304-5.3-5.9	RDL	DUP-02 FIELD DUPLICATE BH-304-5.3-5.9	RDL	RPD	
Maxxam Certificate of Analysis No.	B4N6049V1		B4N6049V1			B4N7072V1		B4N7072V1			RPD ALERT LIMITS (%)[a]
Maxxam Sample ID	YV6418		YV6419			YW2044		YW2045			
Depth (mbgs)	5.3-5.9		5.3-5.9			5.3-5.9		5.3-5.9			
Date Sampled (yyyy/mm/dd)	2014/12/09		2014/12/09			2014/12/10		2014/12/10			
PARAMETERS											
Arsenic	<1.0	1.0	<1.0	1.0	NC	<1.0	1.0	<1.0	1.0	NC	100
Barium	23	0.50	28	0.50	20%	33	0.50	26	0.50	24%	100
Chromium (Total)	9.0	1.0	5.2	1.0	54%	9.1	1.0	11	1.0	19%	100
Copper	9.7	0.50	25	0.50	88%	11	0.50	14	0.50	24%	100
Lead	5.4	1.0	2.8	1.0	NC	2.3	1.0	3.5	1.0	NC	100
Zinc	11	5.0	30	5.0	NC	12	5.0	15	5.0	NC	100

a - Alert limits used for field duplicate samples
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
mbgs - metres below ground surface
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-4

SOIL TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND HEXANE

SAMPLE LOCATIONS	RDL	TRIP BLANK-01	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B4N9446V1	
Maxxam Sample ID		YX3106	
Date Sampled (yyyy/mm/dd)		2014/12/13	
PARAMETERS			
Benzene	0.020	<0.020	No
Toluene	0.020	<0.020	No
Ethylbenzene	0.020	<0.020	No
Total Xylenes	0.040	<0.020	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	10	<10	No
Hexane	0.50	<0.050	No

a - BTEX have been subtracted from the fraction
b - Naphthalene has not been subtracted from the fraction
c - PAHs have not been subtracted from the fraction
RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks are 1x RDL for BTEX, Hexane, and Petroleum Hydrocarbons fraction F1.
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-5

SOIL TRIP BLANK DATA
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	RDL	TRIP BLANK-01	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B4N9446V1	
Maxxam Sample ID		YX3106	
Date Sampled (yyyy/mm/dd)		2014/12/13	
PARAMETERS			
Acetone	0.50	<0.50	No
Bromodichloromethane	0.050	<0.050	No
Bromoform	0.050	<0.050	No
Bromomethane	0.050	<0.050	No
Carbon Tetrachloride	0.050	<0.050	No
Chlorobenzene	0.050	<0.050	No
Chloroform	0.050	<0.050	No
Dibromochloromomethane	0.050	<0.050	No
1,2-Dichlorobenzene	0.050	<0.050	No
1,3-Dichlorobenzene	0.050	<0.050	No
1,4-Dichlorobenzene	0.050	<0.050	No
Dichlorodifluoromethane	0.050	<0.050	No
1,1-Dichloroethane	0.050	<0.050	No
1,2-Dichloroethane	0.050	<0.050	No
1,1-Dichloroethylene	0.050	<0.050	No
cis-1,2-Dichloroethylene	0.050	<0.050	No
trans-1,2-Dichloroethylene	0.050	<0.050	No
1,2-Dichloropropane	0.050	<0.050	No
cis-1,3-Dichloropropene	0.030	<0.030	No
trans-1,3-Dichloropropene	0.040	<0.040	No
1,3-Dichloropropene	0.050	<0.050	No
Ethylene Dibromide	0.050	<0.050	No
Methyl ethyl ketone	0.50	<0.50	No
Methyl isobutyl ketone	0.50	<0.50	No
Methyl t-butyl ether	0.050	<0.050	No
Methylene Chloride	0.050	<0.050	No
Styrene	0.050	<0.050	No
1,1,1,2-Tetrachloroethane	0.050	<0.050	No
1,1,2,2-Tetrachloroethane	0.050	<0.050	No
Tetrachloroethylene	0.050	<0.050	No
1,1,1-Trichloroethane	0.050	<0.050	No
1,1,2-Trichloroethane	0.050	<0.050	No
Trichloroethylene	0.050	<0.050	No
Trichlorofluoromethane	0.050	<0.050	No
Vinyl Chloride	0.020	<0.020	No

RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for trip blanks are 1x RDL for VOCs.
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-6

SOIL FIELD BLANK DATA
POLYCYCLIC AROMATIC HYDROCARBONS

SAMPLE LOCATIONS	RDL	FIELD BLANK-01	
Maxxam Certificate of Analysis No.		B4N9446V1	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		YX3107	
Date Sampled (yyyy/mm/dd)		2014/12/13	
PARAMETERS			
Acenaphthene	0.0050	<0.0050	No
Acenaphthylene	0.0050	<0.0050	No
Anthracene	0.0050	<0.0050	No
Benzo(a)anthracene	0.0050	<0.0050	No
Benzo(a)pyrene	0.0050	<0.0050	No
Benzo(b/j)fluoranthene	0.0050	<0.0050	No
Benzo(g,h,i)perylene	0.0050	<0.0050	No
Benzo(k)fluoranthene	0.0050	<0.0050	No
Chrysene	0.0050	<0.0050	No
Dibenz(a,h)anthracene	0.0050	<0.0050	No
Fluoranthene	0.0050	<0.0050	No
Fluorene	0.0050	<0.0050	No
Indeno(1,2,3-cd)pyrene	0.0050	<0.0050	No
1-Methylnaphthalene	0.0050	<0.0050	No
2-Methylnaphthalene	0.0050	<0.0050	No
Total Methylnaphthalenes	0.0071	<0.0071	No
Naphthalene	0.0050	<0.0050	No
Phenanthrene	0.0050	<0.0050	No
Pyrene	0.0050	<0.0050	No

RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks are 5x RDL for PAHs.
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis

TABLE D-7

SOIL FIELD BLANK DATA
POLYCHLORINATED BIPHENYLS

SAMPLE LOCATIONS	RDL	FIELD BLANK-01	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B4N9446V1	
Maxxam Sample ID		YX3107	
Date Sampled (yyyy/mm/dd)		2014/12/13	
PARAMETERS			
Total Polychlorinated Biphenyls	0.010	<0.010	No

RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for PCBs.
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-8

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-309	RDL	DUP-04 FIELD DUPLICATE BH-309	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B4N9466V1		B4N9466V1			
Maxxam Sample ID	YX3184		YX3185			
Date Sampled (yyyy/mm/dd)	2014/12/15		2014/12/15			
PARAMETERS						
Benzene	0.26	0.20	0.32	0.20	NC	80
Toluene	<0.20	0.20	<0.20	0.20	NC	80
Ethylbenzene	0.52	0.20	0.54	0.20	NC	80
Total Xylenes	<0.40	0.40	<0.40	0.40	NC	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	78	25	67	25	NC	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	100	<100	100	NC	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	200	<200	200	NC	80
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	200	<200	200	NC	80
Hexane	<5.0	5.0	<5.0	5.0	NC	80
Lead	<0.50	0.50	<0.50	0.50	NC	50

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-9

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
SELECTED VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	BH-309	RDL	DUP-04 FIELD DUPLICATE BH-309	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B4N9466V1		B4N9466V1			
Maxxam Sample ID	YX3184		YX3185			
Date Sampled (yyyy/mm/dd)	2014/12/15		2014/12/15			
PARAMETERS						
1,2-Dichloroethane	<0.20	0.20	<0.20	0.20	NC	80
Ethylene Dibromide	<0.20	0.20	<0.20	0.20	NC	80
Methyl t-butyl ether	1.0	0.20	0.98	0.20	NC	80

a - Alert limits used for field duplicate samples
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-10

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
SELECTED METALS

SAMPLE LOCATIONS	BH-309	RDL	DUP-04 FIELD DUPLICATE BH-309	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B4N9466V1		B4N9466V1			
Maxxam Sample ID	YX3184		YX3185			
Date Sampled (yyyy/mm/dd)	2014/12/15		2014/12/15			
PARAMETERS						
Arsenic	<1.0	1.0	<1.0	1.0	NC	50
Barium	360	2.0	350	2.0	3%	50
Chromium	<5.0	5.0	<5.0	5.0	NC	50
Copper	<2.0	2.0	<2.0	2.0	NC	50
Zinc	<5.0	5.0	<5.0	5.0	NC	50

a - Alert limits used for field duplicate samples
NA - Not applicable
NC Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-11

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	RDL	FIELD BLANK-02	EXCEEDS ALERT LIMIT (yes/no)	TRIP BLANK-02	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B4N9503V1		B4N9508V1	
Maxxam Sample ID		YX3356		YX3375	
Date Sampled (yyyy/mm/dd)		2014/12/15		2014/12/15	
PARAMETERS					
Benzene	0.40	<0.20	No	<0.20	No
Toluene	0.20	<0.20	No	<0.20	No
Ethylbenzene	0.20	<0.20	No	<0.20	No
Total Xylenes	0.40	<0.40	No	<0.40	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	25	<25	No	<25	No
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	No	<100	No
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	200	<200	No	<200	No
Petroleum Hydrocarbons F4 (>C34 - C50)	200	<200	No	<200	No
Hexane	5.0	<5.0	No	<5.0	No
Lead	0.50	<0.50	No	<0.50	No

a - BTEX have been subtracted from the fraction
b - Naphthalene has not been subtracted from the fraction
c - PAHs have not been subtracted from the fraction
RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX, hexane and lead; 2x RDL for petroleum hydrocarbons fractions F1 to F4.
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-12

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
SELECTED VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATIONS	RDL	FIELD BLANK-02	EXCEEDS ALERT LIMIT (yes/no)	TRIP BLANK-02	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B4N9503V1		B4N9508V1	
Maxxam Sample ID		YX3356		YX3375	
Date Sampled (yyyy/mm/dd)		2014/12/15		2014/12/15	
PARAMETERS					
Dichlorodifluoromethane	0.50	<0.50	No	<0.50	No
1,1-Dichloroethane	0.10	<0.10	No	<0.10	No
1,2-Dichloroethane	0.20	<0.20	No	<0.20	No
1,1-Dichloroethylene	0.10	<0.10	No	<0.10	No
cis-1,2-Dichloroethylene	0.10	<0.10	No	<0.10	No
trans-1,2-Dichloroethylene	0.10	<0.10	No	<0.10	No
Ethylene Dibromide	0.20	<0.20	No	<0.20	No
Methyl t-butyl ether	0.20	<0.20	No	<0.20	No
Tetrachloroethylene	0.10	<0.10	No	<0.10	No
1,1,1-Trichloroethane	0.10	<0.10	No	<0.10	No
1,1,2-Trichloroethane	0.20	<0.20	No	<0.20	No
Trichloroethylene	0.10	<0.10	No	<0.10	No
Trichlorofluoromethane	0.20	<0.20	No	<0.20	No
Vinyl Chloride	0.20	<0.20	No	<0.20	No

RDL - Reportable detection limit

"-" - Not analyzed

BOLD - Exceeds alert limit

Note - Alert limits for field blanks and trip blanks are 5x RDL for VOCs.

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE D-13

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
SELECTED METAL

SAMPLE LOCATIONS	RDL	FIELD BLANK-02	EXCEEDS ALERT LIMIT (yes/no)	TRIP BLANK-02	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B4N9503V1		B4N9508V1	
Maxxam Sample ID		YX3356		YX3375	
Date Sampled (yyyy/mm/dd)		2014/12/15		2014/12/15	
PARAMETERS					
Arsenic	1.0	<1.0	No	<1.0	No
Barium	2.0	<2.0	No	<2.0	No
Chromium	5.0	<5.0	No	<5.0	No
Copper	2.0	<1.0	No	<1.0	No
Zinc	5.0	<5.0	No	<5.0	No

RDL - Reportable detection limit
"-" - Not analyzed
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for metals.
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

SUPPLEMENTARY PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1545 WOODROFFE AVENUE
OTTAWA, ONTARIO
Location No.: 88001626

Prepared for:

Imperial Oil
90 Wynford Drive
Toronto, Ontario M3C 1K5

Prepared by:

PARSONS
O'Connor Associates Environmental Inc.,
A Parsons Company
5420 Canotek Road, Suite 104
Ottawa, Ontario K1J 1E9
Phone: (613) 742-1781

Ref. No.: 10-8518T02

These documents and the information contained therein are confidential, property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch.II"1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch.I"1", as such legislation may be amended from time to time.

THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD PARTY RELIANCE

Distribution:
3 copies – Imperial Oil, Remediation and Reclamation Services, Surplus Property Management

October 11, 2012

SUMMARY

SITE	1545 Woodroffe Avenue, Ottawa, Ontario
Type of Facility	Esso Retail Fuel Outlet
Municipal Zoning	GM15H(9.5) – General Mixed – Use Zone, subzone 15, height restriction of 8m
Adjacent Land Use	Residential
Aquifer Usage in 250 m radius	None
Reference Standards	MOE (2011) Table 3 (non-potable) site condition standards (medium and fine textured soils, industrial/commercial/community property use)
Type of Organic Vapour Meter Used	Gastechtor 1238ME
Date(s) of Soil Sampling	May 31, 2012
Date(s) of Groundwater Sampling	June 13 to 15, 2012
Number of Test Pits Advanced	0
Number of Boreholes Drilled	1
Number of Wells Installed in Boreholes	1

SUMMARY OF BOREHOLES DRILLED:

Description	BH-16
Well Installed	Yes
Depth (mbgs)	5.9
Dominant Soil Type	Gravel and sand fill, silt, and sand
Depth to Groundwater (mbgs)	5.34
Screened Interval (mbgs)	2.9 to 5.9
Free Product Thickness (mm)	Not Detected
Exceeded Soil Standards	No
Exceeded Groundwater Standards	No
Vertical Soil Impact Delineation Achieved	Not Applicable

Notes:
mbgs – metres below ground surface
mm – millimetres
MOE – Ontario Ministry of the Environment

TABLE OF CONTENTS

Page

SUMMARY i

LIST OF TABLES: iii

LIST OF DRAWINGS: iii

LIST OF APPENDICES: iii

1.0 INTRODUCTION 1
- 1.1 Background 1
- 1.2 Scope of Work 2

2.0 FIELD ACTIVITIES 2
- 2.1 Borehole Day-Lighting and Drilling 2
- 2.2 Monitoring Well Installation 3
- 2.3 Soil Sampling 3
- 2.4 Groundwater Monitoring and Sampling 4
- 2.5 Surveying 5
- 2.6 Quality Assurance and Quality Control 6
- 2.7 Laboratory Analyses 6

3.0 FINDINGS 6
- 3.1 Field Observations 6
  - 3.1.1 Stratigraphy 6
  - 3.1.2 Vapour Concentrations 7
  - 3.1.3 Groundwater 7
  - 3.1.4 Free Product 7
- 3.2 Selected Site Condition Standards 7
  - 3.2.1 Site Sensitivity 7
  - 3.2.2 Groundwater Condition 8
  - 3.2.3 Shallow Soil Property 8
  - 3.2.4 Nearby Water Body 8
  - 3.2.5 Soil Texture 8
  - 3.2.6 Property Use 8
  - 3.2.7 Full Depth or Stratified Site Condition Standards 8
  - 3.2.8 Selected Site Condition Standards 9
- 3.3 Soil Analytical Results 9
- 3.4 Groundwater Analytical Results 9
- 3.5 Quality Assurance and Quality Control Results 9

4.0 SUMMARY AND CONCLUSIONS 10

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE 10

LIST OF TABLES:

Table 1 Groundwater Monitoring Results
Table 2 Soil Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead
Table 3 Soil Analytical Results – pH
Table 4 Groundwater Analytical Results – Petroleum Hydrocarbon Parameters, Hexane and Lead

LIST OF DRAWINGS:

Drawing No. 1 Site Location Map
Drawing No. 2 Site Plan
Drawing No. 3 Monitoring Well Location Plan
Drawing No. 4 Elevation of the Groundwater Potentiometric Surface – 2012/06/13
Drawing No. 5 Soil Analytical Results – Petroleum Hydrocarbons, Hexane and Lead
Drawing No. 6 Groundwater Analytical Results – Petroleum Hydrocarbons, Hexane and Lead

LIST OF APPENDICES:

Appendix A Borehole Logs
Appendix B MOE Well Registration Record
Appendix C Laboratory Certificates of Analysis – Soil and Groundwater
Appendix D Quality Assurance and Quality Control

1.0 INTRODUCTION

O'Connor Associates Environmental Inc., a Parsons Company (Parsons) was retained by Imperial Oil to conduct a Supplementary Phase Two Environmental Site Assessment (ESA) at an operating Esso retail fuel outlet located at 1545 Woodroffe Avenue, in Ottawa, Ontario (the Site).

The purpose of the assessment was to assess for potential contaminants of concern in the soil and groundwater on-site based on the results of a Phase Two ESA conducted by Parsons in 2011. The fieldwork was conducted from May 31 to June 15, 2012.

1.1 BACKGROUND

The Site location is shown on Drawing No. 1 and a Site plan showing the current and former Site configurations are presented on Drawing No. 2. The borehole and monitoring well locations are presented on Drawing No. 3.

Imperial Oil operated the Site as a service station since the early 1960's. Prior to the 1960's, the land was used for agricultural purposes. The location of the repair garage in the 1975 configuration was moved to the west by 1983. Between 1983 and 1995, the Site was re-configured again; a repair garage was constructed and located to the northeast portion of the property. In 1993, the repair garage was converted to a Tim Hortons restaurant.

The current Site features included a kiosk with a convenience store; a carwash; a Tim Hortons restaurant; and three pump islands on a concrete apron underneath a canopy. In addition, three 46 000 L gasoline underground storage tanks (USTs) and one 22 700 L diesel UST are located at the Site.

In 2008, a subsurface investigation was completed prior to undertaking a planned UST upgrade. In 2009 at the time of the Site upgrade, the UST excavation was expanded to remove petroleum hydrocarbon (PHC) contaminated soil. In 2010, a supplementary ESA was completed to assess potential PHC related impacts in the soil and groundwater.

According to the City of Ottawa, the main parcel of the Site is zoned as general mixed use (GM15H(9.5)). A small triangular wedge (approximately 65 m by 15 m) located on the north side of the Site, which is not part of this assessment, is a residential third density zone.

1.2 SCOPE OF WORK

The scope of work was to perform the following activities:

- Advance one borehole (BH-16) in the vicinity of the car wash and east property line and install a monitoring well.
- Collect soil samples from the borehole for laboratory analysis of the following parameters: benzene, toluene, ethylbenzene, xylenes (BTEX); PHC fractions F1 to F4; hexane; and lead.
- Collect soil samples for laboratory analysis of pH to facilitate selection of the site condition standards.
- Monitor all of the new and existing accessible wells for subsurface vapour concentrations, water levels and the presence or absence of light non-aqueous phase liquid hydrocarbons (free product).
- Collect groundwater samples from select new and existing monitoring wells for laboratory analysis of some or all of the following parameters: BTEX; PHC fractions F1 to F4; hexane; and lead.
- Prepare a report that describes the field activities and the results of the Site assessment.

2.0 FIELD ACTIVITIES

Prior to proceeding with the subsurface investigation, various utility representatives and a private utility locating contractor identified underground utility locations.

All field procedures were conducted in accordance with the Ontario Ministry of the Environment (MOE) *Guidance for Completing Phase Two Environmental Site Assessments* under Ontario Regulation 153/04 (as amended), the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended), and standard industry practice.

2.1 BOREHOLE DAY-LIGHTING AND DRILLING

Veolia ES Canada Services was retained by Parsons to day-light and advance the borehole. The borehole was day-lighted on May 31, 2012 to a depth of 2.4 m below ground surface (mbgs) using a vacuum excavator.

George Downing Estate Drilling Inc. was retained by Parsons to further advance the borehole using a CME 75 truck-mounted drill rig, equipped with hollow stem augers, on May 31, 2012.

The borehole location is shown on Drawing No. 3. The borehole was advanced to a maximum depth of 5.9 mbgs.

2.2 MONITORING WELL INSTALLATION

A monitoring well, consisting of a 51 mm diameter polyvinyl chloride (PVC) 10 slot screen, measuring approximately 3.0 m in length, and an un-slotted riser, was installed in the borehole. The annular space between the PVC well and the borehole wall was backfilled to approximately 0.2 m above the top of the screen with #2 silica sand and then with hydrated bentonite pellets to approximately 0.1 mbgs. The monitoring well was then finished with a flush-mount casing set in concrete grout to protect the well from damage.

Following installation of the monitoring well, the well was developed by purging the water until it was observed to be reasonably free of turbidity or until the well became dry.

Monitoring well installation details are presented on the borehole log in Appendix A and in Table 1. The MOE well record is presented in Appendix B.

2.3 SOIL SAMPLING

Soil sampling was conducted at regular depth intervals in the borehole using a stainless steel spoon sampling device and a split-spoon sampler. The samples were collected from each device using a clean stainless steel trowel and nitrile gloves and placed in laboratory supplied jars. The sampling devices were washed prior to collection of each soil sample. Specifically, any excess soil was brushed off prior to scrubbing the sampling devices with soapy water, rinsing with distilled water and allowing it to air dry. Each soil sample was immediately split and one portion of the sample was sealed in a clean plastic bag for screening, which included determining textural description, visual evidence of impact (e.g., staining or free product), and measurement of the sample combustible headspace vapour concentration (soil vapour concentration). The remainder of the sample was promptly placed in containers supplied by the laboratory and stored in coolers with ice for possible analysis.

The soil samples submitted for analysis of BTEX, PHC fraction F1, and hexane were each collected in two 40 mL vials pre-charged with 10 mL of methanol. Approximately 5 g of soil was collected from the stainless steel spoon sampling device or split spoon sampler using a clean disposable syringe and nitrile gloves and placed in each methanol filled sampling vial. Samples for the remaining parameters were collected in either 60 mL or 120 mL glass jars with Teflon lined lids.

The soil vapour concentrations were measured using a Gastech Model 1238ME combustible gas detector having a minimum detection level of 5 parts per million by volume (ppmv). The gas detector was operated in the methane elimination mode.

The calibration of the Gastechtor was checked daily in the field. The procedure involved checking the instrument response against both a low [nominal 400 parts per million by volume (ppmv)] and high [nominal 43% lower explosive limit (% LEL)] concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument readings were within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if either of the readings was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field, until the instrument reads within ±10% for both gas standards.

Soil sampling details are presented on the borehole log in Appendix A.

Two samples from the borehole were selected for laboratory analyses, based on sample location relative to the apparent water table, visual observations and/or field screening results. In general, one worst case soil sample, based on field screening results, and one deeper sample from the first apparent non-impacted zone, were submitted for laboratory analysis. The samples were stored in coolers with ice.

2.4 GROUNDWATER MONITORING AND SAMPLING

On June 13, 2012, all of the new and existing accessible wells were monitored for subsurface vapour concentrations, water levels, and the presence or absence of free product. The wells were generally monitored in order of least impacted to most impacted (based on soil field screening results and previous soil and groundwater results).

Immediately after removing the well caps, the maximum subsurface vapour concentrations in the wells were measured using a Gastechtor 1238ME combustible gas detector that was operated in methane elimination mode. This was done by inserting the collection tube of the gastechtor into the un-slotted riser pipes and recording the peak instrument readings.

The depth to the water table and presence or absence of free product in the wells were determined with a Heron H.OIL electronic interface probe that was cleaned with a solution of phosphate free detergent and water, then rinsed with distilled water, between monitoring wells.

If a measurable thickness of free product is observed in any well, Parsons protocol is not to collect a groundwater sample from that well. However, a groundwater sample is collected from a well if a petroleum hydrocarbon sheen is observed.

Groundwater samples were collected from selected accessible monitoring wells between June 13 and 15, 2012. The wells were generally sampled in order of least impacted to most impacted (based on soil screening results and historical groundwater data). A lead sample from BH5 could not be collected as there was insufficient water. The wells were sampled using a low-flow purging methodology. Low-flow purging was completed using a variable-flow peristaltic pump to remove groundwater from the mid-point of the monitoring well screened zone. The pump was connected to a flow-through cell equipped with a multimeter that measured pH, temperature, electrical conductivity, dissolved oxygen (DO), reduction oxidation potential (REDOX), and turbidity. During low-flow purging the water level in the well was continually monitored, and the purging rate was adjusted such that the overall drawdown from the static groundwater level did not exceed approximately 10 cm. The purging rates ranged from 100 mL/min to 110 mL/min. The sample was collected when the pH, temperature, electrical conductivity, DO, REDOX and turbidity measurements generally stabilized as noted below, over three consecutive readings, taken at a minimum rate of every flow-through cell volume.

Temperature -	± 3%
pH -	± 0.1 pH Units
Electrical Conductivity -	± 3%
DO -	± 10%
REDOX -	± 10 mV
Turbidity -	± 10%

The pump and flow-through cell were connected to the wells with polyethylene and silicone tubing that were individually dedicated to each monitoring well. All groundwater samples were collected using the dedicated tubing.

Samples for analysis of BTEX, PHC fraction F1, and hexane were collected in 40 mL clear glass vials (with zero headspace), pre-charged with sodium bisulphate preservative. Samples for analysis of PHC fractions F2 to F4 were collected in 500 mL amber glass bottles pre-charged with sodium bisulphate. Samples for analysis of PHC fraction F4 gravimetric were collected in 1 L amber glass bottles pre-charged with hydrochloric acid preservative. Samples for analysis of lead were field filtered using 0.45 µm groundwater filters and collected in 250 mL HDPE plastic bottles pre-charged with nitric acid preservative. All sample bottles were supplied by the laboratory. The groundwater samples were placed in coolers with ice immediately after they were collected.

2.5 SURVEYING

On June 14, 2012 the newly installed monitoring well was surveyed vertically relative to an arbitrary benchmark. The assigned elevation of the benchmark was 88.79 m. The benchmark location is shown on Drawing No. 4 and described in Table 1.

2.6 QUALITY ASSURANCE AND QUALITY CONTROL

A quality assurance and quality control (QA/QC) program was implemented to reduce and quantify potential issues introduced during sample collection, handling, shipping and analysis. The program included, but was not limited to using dedicated sampling equipment, using sample specific identification and labelling procedures, and using chain of custody records.

Field soil QA/QC samples submitted to the laboratory included one field blank methanol sample for analysis of BTEX, PHC F1, and hexane.

Field groundwater QA/QC samples submitted to the laboratory included one field duplicate, one field blank and one trip blank sample for analysis of BTEX, PHC fractions F1 to F4, hexane, and lead.

2.7 LABORATORY ANALYSES

The soil and groundwater samples collected from the boreholes were submitted for laboratory analyses of the following parameters: BTEX; PHC fractions F1 to F4; hexane; and lead. A total of two soil samples and nine groundwater samples, excluding QA/QC samples, were submitted for analysis.

Selected soil samples were also submitted for pH analysis to facilitate selection of applicable MOE site condition standards.

The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam is accredited by the Standards Council of Canada. Analytical methods used by the laboratory are referenced in the certificates of analysis presented in Appendix C. Analytical procedures were conducted in accordance with the MOE *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (as amended).

3.0 FINDINGS

3.1 FIELD OBSERVATIONS

3.1.1 STRATIGRAPHY

The stratigraphic profile encountered with increasing depth in the borehole generally consisted of gravel or sand fill to a depth of 2.1 mbgs; silt to a depth of 5.0 mbgs; and sand to the maximum depth of assessment of 5.9 mbgs. Detailed stratigraphic descriptions are presented on the borehole log in Appendix A.

3.1.2 VAPOUR CONCENTRATIONS

Soil vapour concentrations measured in the samples recovered from the borehole are presented on the log in Appendix A. The soil vapour concentrations ranged from 20 ppmv to 80 ppmv.

Subsurface vapour concentrations measured in the monitoring wells on June 13, 2012 are presented in Table 1. As indicated, the subsurface vapour concentrations ranged from not detected (<5 ppmv) to 100% LEL.

3.1.3 GROUNDWATER

On June 13, 2012, the depth to groundwater ranged from 3.79 mbgs to 5.49 mbgs. The groundwater depths and the calculated potentiometric elevations are presented in Table 1.

The groundwater potentiometric surface elevations are presented on Drawing No. 4. As indicated, the inferred principal direction of groundwater flow, in the sand layer, was north and north-west. Since groundwater elevations were measured at only two monitoring well locations in the clay layer, the inferred direction of groundwater flow in this stratigraphic unit could not be determined.

3.1.4 FREE PRODUCT

As indicated in Table 1, measurable free product was not detected in any monitoring well; however, a petroleum hydrocarbon sheen (i.e. <1 mm) was observed in BH12.

3.2 SELECTED SITE CONDITION STANDARDS

For this Site, the approach to use the amended (2011) Ontario Regulation 153/04 generic site condition standards was selected. The rationale for selection of the applicable MOE 2011 standards is described below and based on information that is detailed in this or other sections of the report.

3.2.1 SITE SENSITIVITY

The Site would not be considered environmentally sensitive, based on the following:

- No part of the Site is on or within 30 m of an area of natural significance;
- pH values for surface soil samples from this and previous ESAs were not less than 5 or greater than 9; and

- pH values for subsurface soil samples from this and previous ESAs were not less than 5 or greater than 11.

3.2.2 GROUNDWATER CONDITION

The groundwater condition is non-potable based on the following:

- The Site and all properties within 250 m of the Site boundaries are supplied by a municipal water supply system.
- The Site is not in a municipally designated groundwater protection area.

3.2.3 SHALLOW SOIL PROPERTY

The Site would not be considered a shallow soil property, based on the following:

- The available borehole logs and geologic records indicate that less than one-third of the area of the Site consists of soil equal to or less than 2 m in depth beneath the soil surface, excluding any non-soil surface treatment.

3.2.4 NEARBY WATER BODY

A water body, in whole or in part, is not on the Site or within 30 m of the Site boundaries.

3.2.5 SOIL TEXTURE

The applicable soil texture for the Site is based on the following:

- Medium to fine textured soils, as determined by the borehole logs, geological maps and the historical grain size analyses, which collectively indicated that more than two-thirds of the soil at the property, measured by volume, consisted of more than 50 percent of particles that are smaller than 75 µm in diameter.

3.2.6 PROPERTY USE

The applicable property use is as follows:

- Industrial/commercial/community property use, as the Site is currently used for commercial purposes and the current zoning of the Site is mixed general use.

3.2.7 FULL DEPTH OR STRATIFIED SITE CONDITION STANDARDS

The option to use the full depth, rather than the stratified, generic site condition standards was selected.

3.2.8 SELECTED SITE CONDITION STANDARDS

Based on the above discussion, the following site condition standards were selected for application at the Site:

- Full depth generic site condition standards in a non-potable groundwater condition (MOE 2011 Table 3) for industrial/commercial/community property use and medium and fine textured soils.

3.3 SOIL ANALYTICAL RESULTS

The soil analytical results for BTEX, PHC fractions F1 to F4, hexane, and lead are presented and compared to the applicable MOE Table 3 standards in Table 2 and shown on Drawing No. 5. As indicated, all of the results satisfied the applicable standards.

The soil analytical results for pH are presented and compared to the applicable MOE Table 3 standards in Table 3. As indicated all of the results satisfied the applicable standards.

3.4 GROUNDWATER ANALYTICAL RESULTS

The groundwater analytical results for BTEX, PHC fractions F1 to F4, hexane, and lead are presented and compared to the applicable MOE Table 3 standards in Table 4 and shown on Drawing No. 6. As indicated, the groundwater sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions, hexane and lead, with the exception of benzene, and/or PHC fractions F1 and F2 identified at six locations.

3.5 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

The results of the laboratory QA/QC analyses are presented in the laboratory certificates of analysis in Appendix C. The analyses included instrument and extraction surrogate recoveries, method blanks, matrix duplicates, matrix spikes, and laboratory control samples. No lab QA/QC issues were identified that call into question the reliability of the lab data reported.

The results of the field QA/QC sample analysis are presented in the tables in Appendix D. The samples included trip blank, field blank and field duplicate samples. No field QA/QC issues were identified that call into question the reliability of the lab data reported.

The laboratory and field QA/QC discussions are presented in Appendix D. In summary, no QA/QC issues were identified that would materially affect the overall conclusions for the Phase II ESA results presented in this report.

4.0 SUMMARY AND CONCLUSIONS

During this supplementary Phase Two ESA, one borehole was advanced and a monitoring well was installed. Soil and groundwater samples were submitted for laboratory analysis of the following parameters: BTEX, PHC fractions F1 to F4, hexane, and lead.

The results of the investigation are summarized as follows:

1. The stratigraphic profile encountered in the borehole with increasing depth generally consisted of gravel or sand fill to a depth of 2.1 mbgs; silt to a depth of 5.0 mbgs; and sand to the maximum depth of assessment of 5.9 mbgs.

2. The depth to groundwater ranged from 3.79 mbgs to 5.49 mbgs. The inferred principal direction of groundwater flow in the sand layer was to the north and north-west and could not be determined in the clay layer

3. Free product was not detected during monitoring of the wells; however, a petroleum hydrocarbon sheen was observed in BH12.

4. The MOE (2011) Table 3 (non potable) site condition standards for medium and fine textured soils and industrial/commercial/community property use were selected for comparison with the soil and groundwater analytical results.

5. All soil sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions F1 to F4, hexane, and lead.

6. All groundwater sample analytical results satisfied the applicable Table 3 standards for BTEX, PHC fractions, hexane and lead, with the exception of benzene, and/or PHC fractions F1 and F2 identified at six locations.

5.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by O'Connor Associates Environmental Inc. for Imperial Oil. It is intended for the sole and exclusive use of Imperial Oil, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and O'Connor Associates make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any

other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by O'Connor Associates with respect to this report and any conclusions or recommendations made in this report reflect O'Connor Associates' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of O'Connor Associates. Nothing in this report is intended to constitute or provide a legal opinion.

We trust the foregoing information is satisfactory for your requirements. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

O'CONNOR ASSOCIATES ENVIRONMENTAL INC., A PARSONS COMPANY

Nancy Hazell, B.Sc.

Gerry Parrott, P.Geo.

NLH:bn

W:\8000-999\8518#00\8518#02\8518T0212.R01(P2)f.docx

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH1	88.51	88.61	1.8 - 4.3	2008/11/19	>100%	DRY	DRY	DRY
				2008/12/11	45%	DRY	DRY	DRY
				2009/05/12	AW	AW	AW	AW
BH2	88.33	88.51	1.5 - 4.3	2008/11/19	325	ND	4.25	84.26
				2008/12/11	175	ND	3.40	85.11
				2009/05/12	AW	AW	AW	AW
BH3	88.50	88.63	4.6 - 6.1	2008/11/19	70%	ND	4.98	83.65
				2008/12/11	>100%	ND	4.95	83.69
				2009/05/12	AW	AW	AW	AW
BH4	88.62	88.72	4.2 - 6.1	2008/11/19	170	ND	5.06	83.65
				2008/12/11	5%	ND	5.04	83.68
				2009/05/12	AW	AW	AW	AW
BH5	88.79	88.85	1.8 - 4.6	2008/11/19	20%	ND	4.37	84.48
				2008/12/11	20%	ND	4.13	84.72
				2009/05/12	95	ND	3.17	85.68
	88.79	88.92		2010/03/16	75	ND	3.32	85.60
				2010/06/03	5%	ND	3.93	84.99
				2010/07/23	10%	ND	4.11	84.81
				2010/11/17	5%	ND	4.06	84.86
				2011/06/27	5%	ND	3.34	85.58
				2011/10/31	8%	ND	4.32	84.60
				2012/06/13	23%	ND	4.18	84.75
BH6	88.77	88.89	2.0 - 4.7	2008/11/19	25%	ND	5.25	83.63
				2008/12/11	>100%	Sheen	5.23	83.66
				2009/05/12	11%	ND	4.99	83.90
	88.82	88.95		2010/03/16	25%	ND	5.09	83.86
				2010/06/03	>100%	ND	5.11	83.84
				2010/07/23	5%	ND	5.21	83.74
				2010/11/17	>100%	ND	5.11	83.84
				2011/06/27	>100%	ND	4.93	84.02
				2011/10/31	5%	ND	5.28	83.67
				2012/06/13	40%	ND	5.33	83.62
BH7	88.87	88.94	2.0 - 4.7	2008/11/19	150	ND	3.86	85.07
				2008/12/11	225	ND	3.67	85.26
				2009/05/12	160	ND	3.14	85.79
	88.85	88.97		2010/03/16	50	ND	3.31	85.67
				2010/06/03	75	ND	3.55	85.42
				2010/07/23	100	ND	3.70	85.27
				2010/11/17	150	ND	3.60	85.37
				2011/06/27	120	ND	3.34	85.64
				2011/10/31	180	ND	3.99	84.98
				2012/06/13	150	ND	3.79	85.18
BH8	88.88	89.00	4.5 - 6.0	2010/03/16	75	ND	5.14	83.86
				2010/06/03	75	ND	5.18	83.82
				2010/07/23	150	ND	5.28	83.72
				2010/11/17	150	ND	5.18	83.82
				2011/06/27	140	ND	5.00	84.00
				2011/10/31	175	ND	5.35	83.66
				2012/06/13	5%	ND	5.41	83.60

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH9	88.97	89.10	5.8 - 7.3	2010/03/16	25	ND	5.23	83.87 *
				2010/06/03	25	ND	5.27	83.83 *
				2010/07/23	25	ND	5.37	83.73 *
				2010/11/17	50	ND	5.27	83.83 *
				2011/06/27	<5	ND	5.09	84.01 *
				2011/10/31	60	ND	5.43	83.67 *
				2012/06/13	80	ND	5.49	83.61 *
BH10	88.46	88.56	3.7 - 6.1	2011/10/31	13%	ND	4.87	83.69
				2012/06/13	20%	ND	4.94	83.62
BH11	88.43	88.57	3.1 - 6.1	2010/03/16	5%	ND	4.70	83.87
				2010/06/03	500	ND	4.72	83.85
				2010/07/23	15%	ND	4.82	83.75
				2010/11/17	15%	ND	4.73	83.84
				2011/06/27	325	ND	4.44	84.13
	88.53	88.57		2011/10/31	16%	ND	4.79	83.78
				2012/06/13	22%	ND	4.86	83.71
BH12	88.74	88.82	3.0 - 6.0	2010/03/16	>100%	ND	4.97	83.86
				2010/06/03	225	ND	4.99	83.83
				2010/07/23	>100%	ND	5.09	83.73
				2010/11/17	>100%	ND	5.00	83.82
				2011/06/27	>100%	73 (4)	4.80	84.02
				2011/10/31	240	2 (0)	5.15	83.67
				2012/06/13	100%	Sheen	5.22	83.60
BH-13	88.42	88.49	3.7 - 6.1	2011/10/31	17%	ND	3.83	84.65
				2012/06/13	40%	ND	4.90	83.59
BH-14	88.77	88.85	3.7 - 6.1	2011/10/31	12%	ND	5.23	83.63
				2012/06/13	50%	ND	5.28	83.57 *
BH-15	88.83	88.94	3.0 - 6.1	2011/10/31	400	ND	5.29	83.66
				2012/06/13	215	ND	5.33	83.61 *
BH-16	88.80	88.95	2.9 - 5.9	2012/06/13	<5	ND	5.34	83.61

1 - Relative to local benchmark (BH5 top of riser pipe) having an elevation of 88.79 m
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75 g/cm^3
AW - Abandoned well
m - metres
mbgs - metres below ground surface
mm - millimetres
ND - Not detected
( ) - After bailing/purging
* - Water level above top of screen

TABLE 2

SOIL ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-16-0.6-1.2	BH-16-4.6-5.2	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B280939	B280939	
Maxxam Sample ID	NR1908	NR1909	
Sample Depth (mbgs)	0.6-1.2	4.6-5.2	
Date Sampled (yyyy/mm/dd)	2012/05/31	2012/05/31	
PARAMETERS			
Benzene	<0.020	<0.020	0.4
Toluene	<0.020	<0.020	78
Ethylbenzene	<0.020	<0.020	19
Total Xylenes	<0.040	<0.040	30
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<10	<10	65
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<10	<10	250
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	60	<10	2500
Petroleum Hydrocarbons F4 (>C34 - C50)	730*	<10	6600
Hexane	<0.50	<0.50	88
Lead	24	7.1	120

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

mbgs - metres below ground surface

Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis

The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.

BOLD - Exceeds applicable standard

TABLE 3

SOIL ANALYTICAL RESULTS

pH

SAMPLE LOCATIONS	BH-16-0.6-1.2	BH-16-5.3-5.9	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B280939	B280939	
Maxxam Sample ID	NR1908	NR1910	
Sample Depth (mbgs)	0.6-1.2	5.3-5.9	
Date Sampled (yyyy/mm/dd)	2012/05/31	2012/05/31	
PARAMETERS			
pH	7.41 NA	NA 7.50	5.0 to 9.0[b] 5.0 to 11.0[c]

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, industrial/commercial/community property use, medium and fine textured soils

b - For surface soil

c - For subsurface soil

"-" - Not analyzed

NA - Not applicable

mbgs - metres below ground surface

Results for pH are reported in Standard Units (SU)

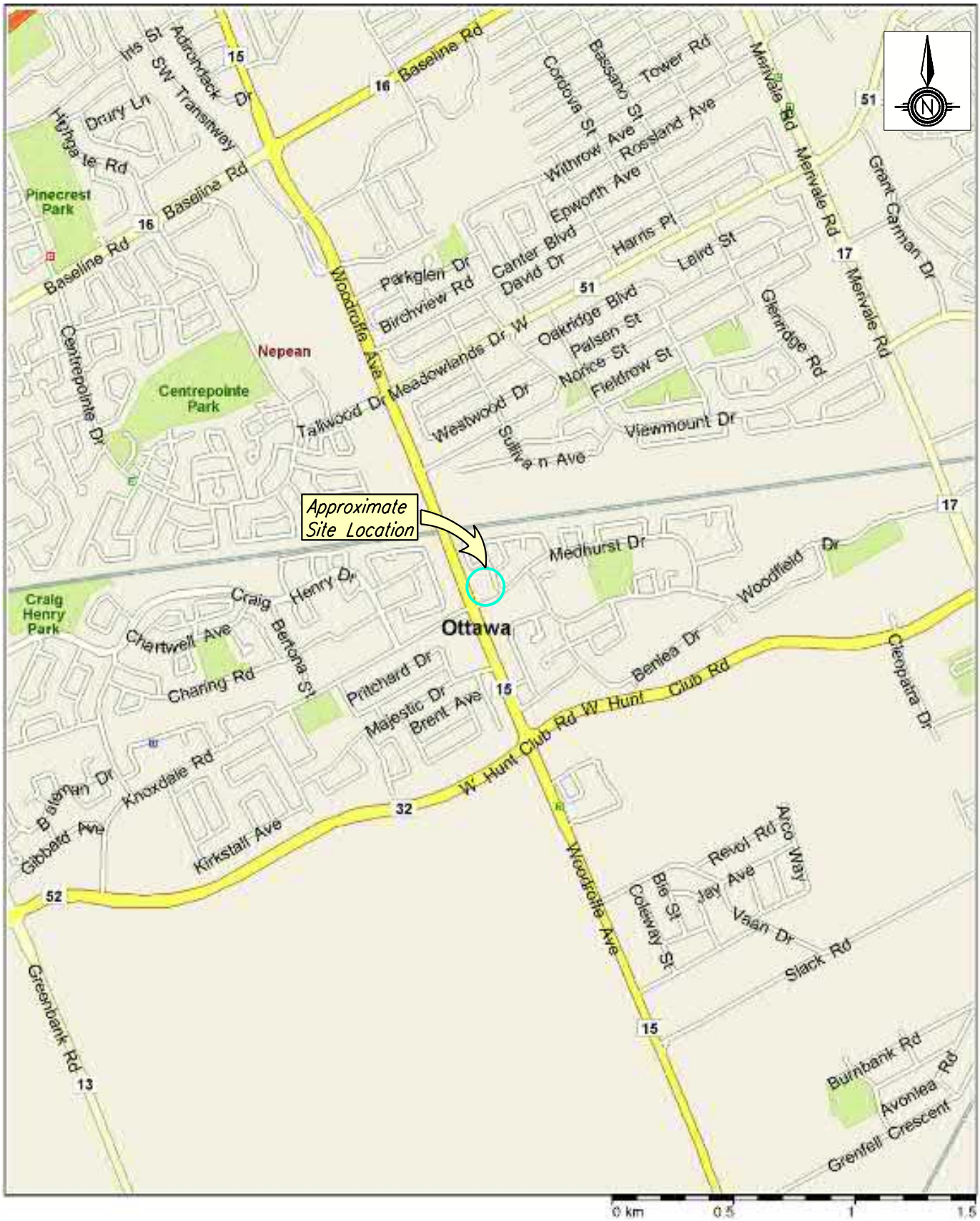
BOLD - Exceeds applicable standard

TABLE 4

GROUNDWATER ANALYTICAL RESULTS
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH5	BH6	BH7	BH8	BH-10	BH11	BH12	BH-13	BH-16	DUP-3 FIELD DUPLICATE BH-16	TABLE 3 STANDARDS[a]
Maxxam Certificate of Analysis No.	B289281	B290448	B289281	B290448	B289234	B289281	B290448	B289281	B289234	B289234	
Maxxam Sample ID	NV1659	NV7647	NV1658	NV7649	NV1406	NV1656	NV7648	NV1657	NV1404	NV1405	
Date Sampled (yyyy/mm/dd)	2012/06/13	2012/06/14	2012/06/13	2012/06/15	2012/06/13	2012/06/13	2012/06/15	2012/06/13	2012/06/13	2012/06/13	
PARAMETERS											
Benzene	50	210	<0.20	46	76	64	**680**	9.3	<0.20	<0.20	430
Toluene	5.5	41	<0.20	3.7	2.7	4.2	490	69	<0.20	<0.20	18 000
Ethylbenzene	2000	1700	<0.20	610	130	87	500	750	<0.20	<0.20	2300
Total Xylenes	4200	4200	<0.40	34	42	47	450	1100	<0.40	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	**9600**	**7600**	<25	**1300**	330	290	**2300**	**2600**	<25	<25	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	**3100**	**2600**	<100	**820**	**200**	120	**1400**	**540**	<100	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	500
Hexane	<50	73	<5.0	<10	<5.0	<5.0	61	17	<5.0	<5.0	520
Lead	-	0.67	0.77	<0.50	<0.50	0.62	1.3	0.57	<0.50	<0.50	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
"-" - Not analyzed
* - Result from F4 gravimetric analysis
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds applicable standard

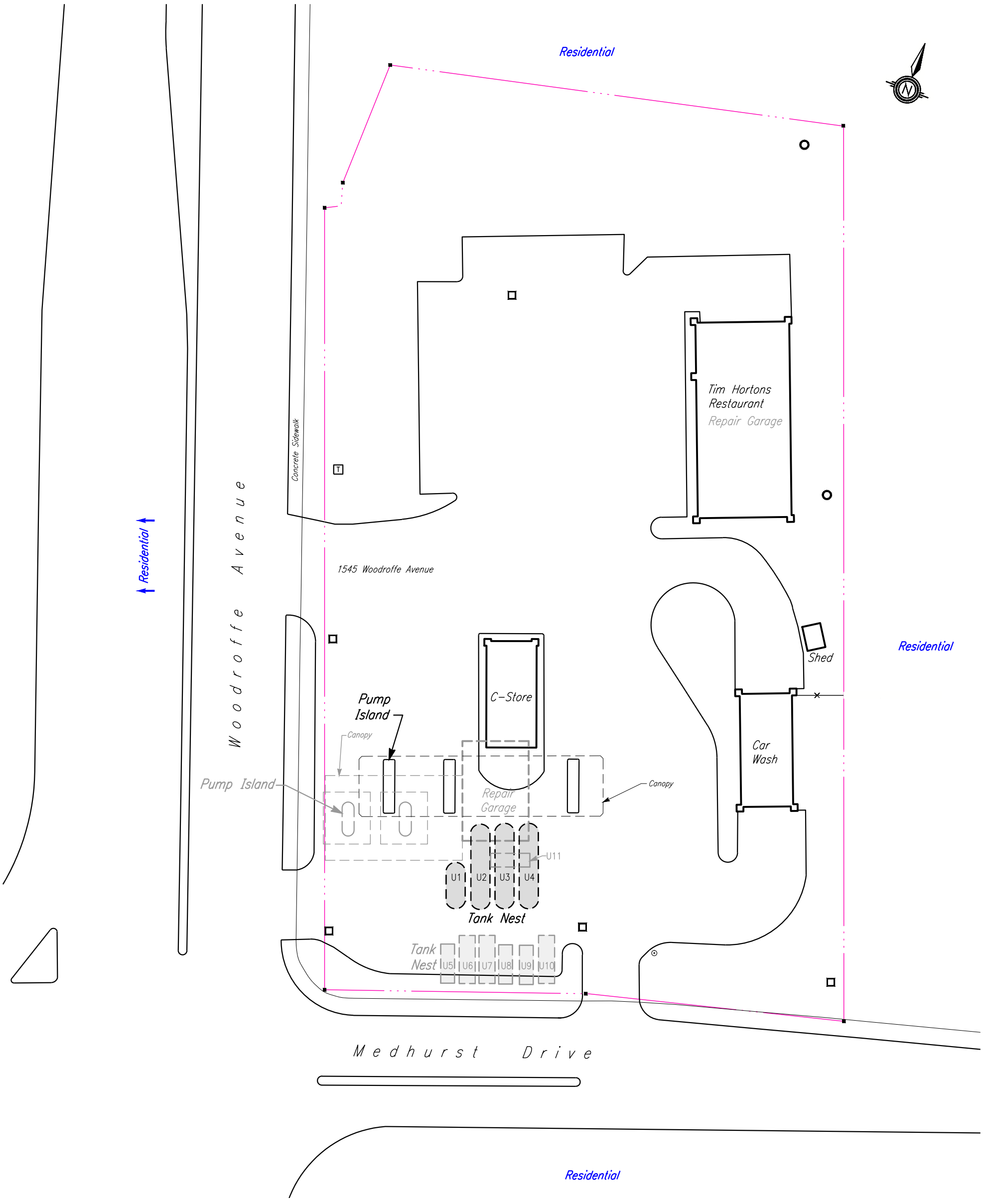


REFERENCE: Microsoft Streets and Trips, 2009.

Site Location Map

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 8.5 x 11 in.	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518T104	Date: 2012/07/24
O'CONNOR ASSOCIATES		Drawing No.: 1



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- 2010/12/31 — Date Format: yyyy/mm/dd

Utilities

- Catch Basin
- Manhole
- Utility Pole

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Tank Chart

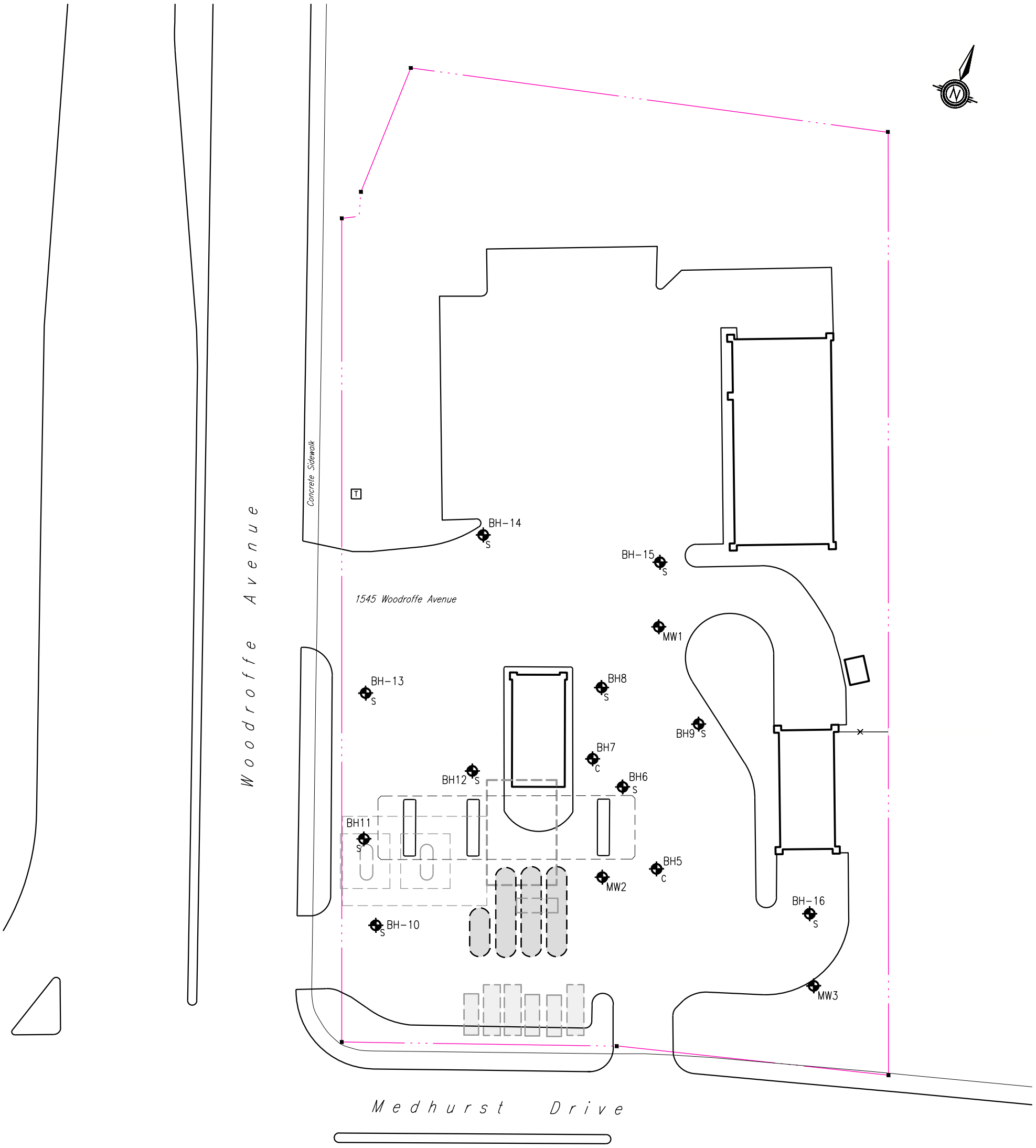
Tank	Type	Capacity	Product	Status
U1	Double Wall Fibreglass UST	22 700 L	Diesel	Active
U2	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U3	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U4	Double Wall Fibreglass UST	46 000 L	Gasoline	Active
U5	UST	13 600 L	Gasoline	Removed
U6	UST	22 700 L	Gasoline	Removed
U7	UST	22 700 L	Gasoline	Removed
U8	UST	13 600 L	Diesel	Removed
U9	UST	13 600 L	Gasoline	Removed
U10	UST	22 700 L	Gasoline	Removed
U11	UST	2 273 L	Furnace Oil	Removed

Site Plan

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518S105	Date: 2012/07/27
PARSONS		Drawing No.: 2

Ref.: S-34-P



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- Transformer (Pad Mounted)
- Monitoring Well
  - BH5 to BH7 by O'Connor, 2008
  - BH8, BH9, BH11 and BH12 by O'Connor, 2010
  - BH-10 and BH-13 to BH-15 by O'Connor, 2011
  - BH-16 by Parsons, 2012
  - MW1 to MW3 by Unknown
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- 2010/12/31 Date Format: yyyy/mm/dd

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

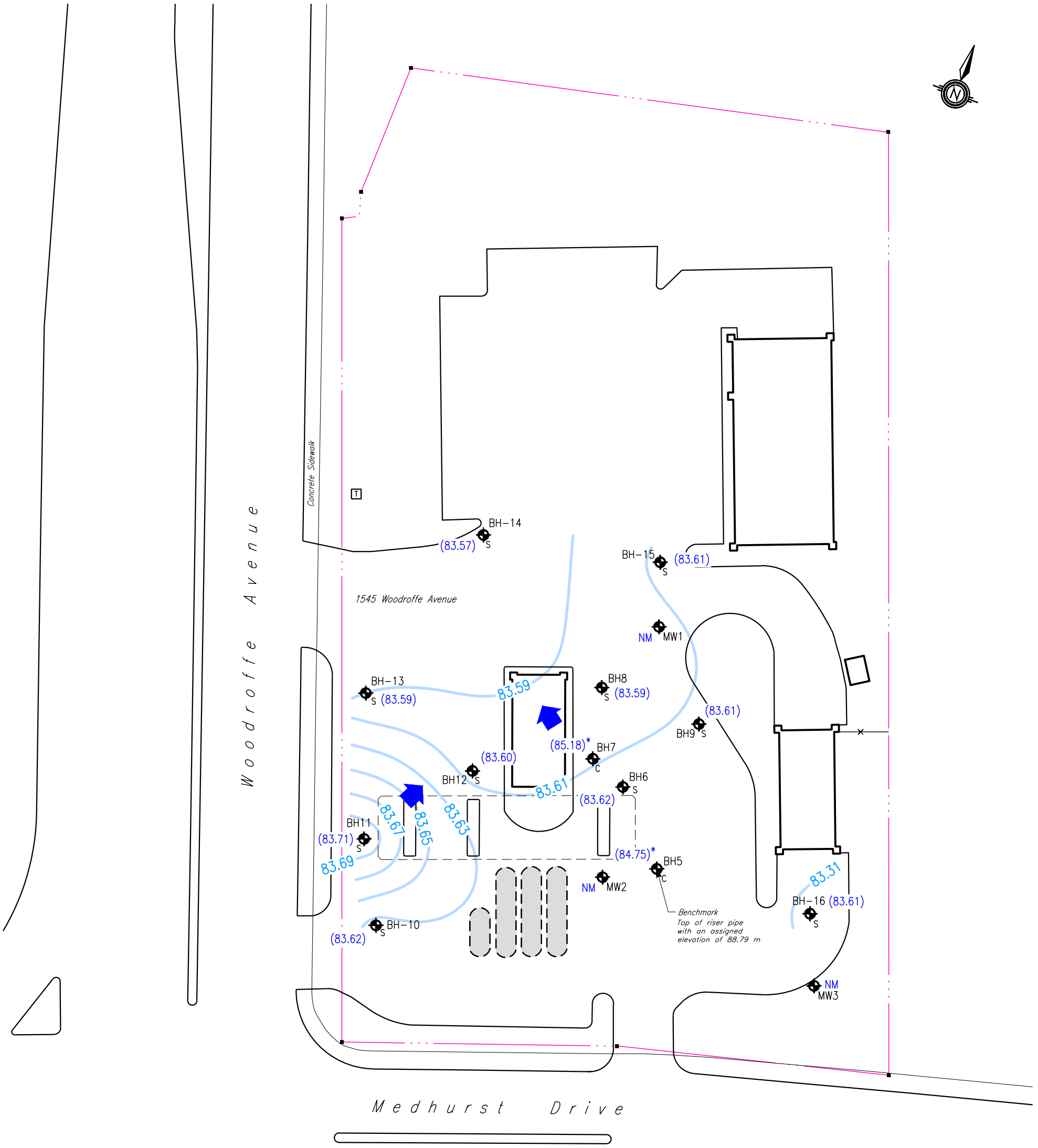
Original Scale 1:500

Monitoring Well Location Plan

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518S106	Date: 2012/07/27
PARSONS		Drawing No.: 3

Ref.: S-34-P



LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
  - BH5 to BH7 by O'Connor, 2008
  - BH8, BH9, BH11 and BH12 by O'Connor, 2010
  - BH-10 and BH-13 to BH-15 by O'Connor, 2011
  - BH-16 by Parsons, 2012
  - MW1 to MW3 by Unknown
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- 2010/12/31 — Date Format: yyyy/mm/dd
- Inferred Direction of Groundwater Flow
- 49.00 — Potentiometric Surface Contour with Elevation, metres
- (49.00) — Potentiometric Surface Elevation, metres
- (49.00)* — Value Not Used for Contouring
- NM — Well Not Monitored

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

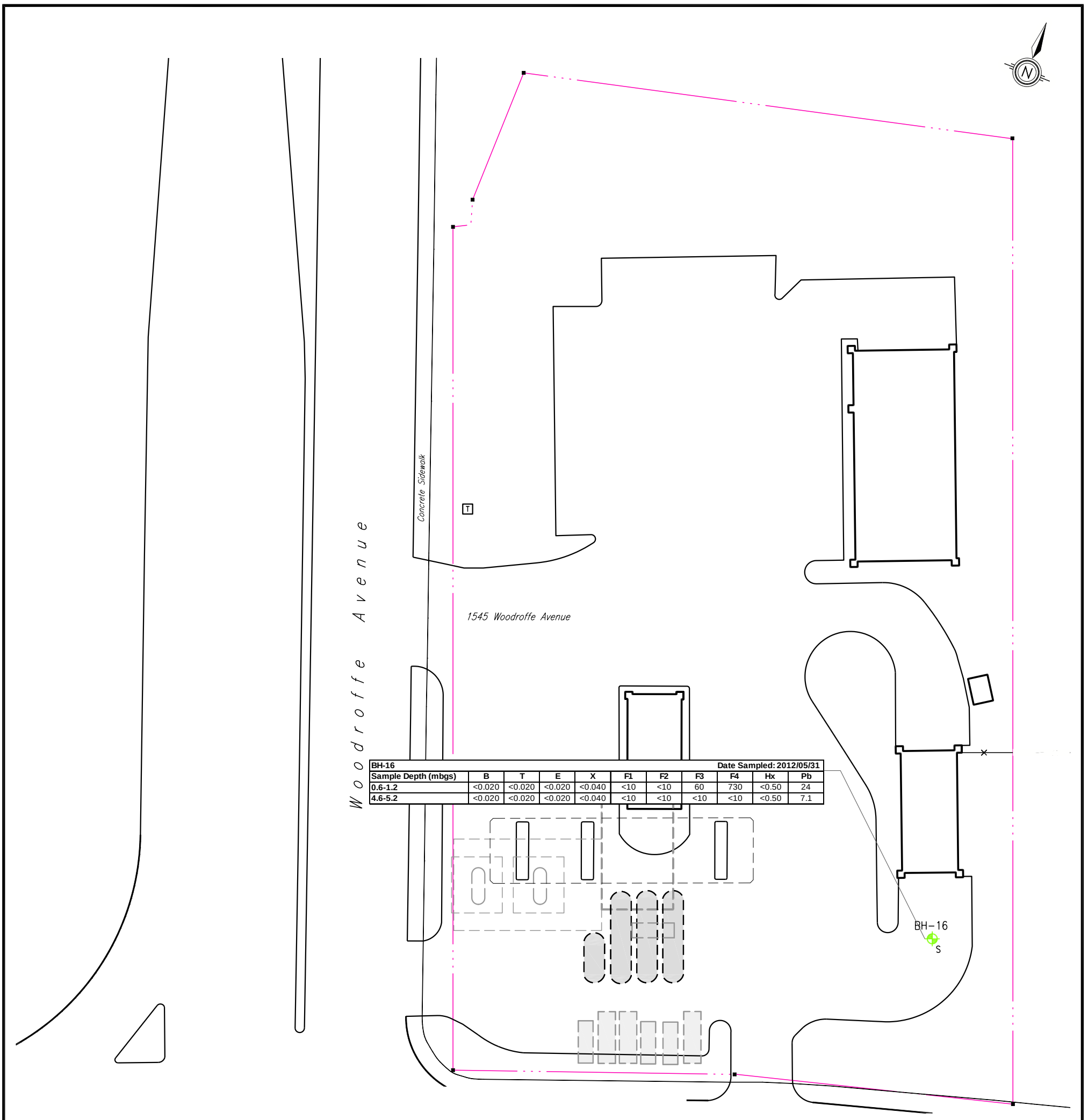
Original Scale 1:500

Elevation of the Groundwater Potentiometric Surface
2012/06/13

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518M115	Date: 2012/07/27
PARSONS		Drawing No.: 4

Ref.: S-34-P



BH-16										Date Sampled: 2012/05/31
Sample Depth (mbgs)	**B**	**T**	**E**	**X**	**F1**	**F2**	**F3**	**F4**	**Hx**	**Pb**
0.6-1.2	<0.020	<0.020	<0.020	<0.040	<10	<10	60	730	<0.50	24
4.6-5.2	<0.020	<0.020	<0.020	<0.040	<10	<10	<10	<10	<0.50	7.1

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
  BH–16 by Parsons, 2012
  (S) Screened in Sand
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/g — Micrograms Per Gram, dry weight basis

Analytical Results

All Results Reported in µg/g

- Location Where All Soil Samples Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where At Least One Soil Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where No Soil Sample Were Submitted for Analysis, Shown in Black
- **1234** — Exceedances of Standards, Shown in Red and Bold
- DUP — Field Duplicate Sample
- < — Result Less Than Reportable Detection Limit

Standards

Parameters	**B**	**T**	**E**	**X**	**F1**	**F2**	**F3**	**F4**	**Hx**	**Pb**
Standard* µg/g	0.4	78	19	30	65	250	2500	6600	88	120

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOE Table 3 (2011)** Industrial/commercial/community, fine and medium textured soils

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Soil Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead
Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02
Reviewed: NLH	File No.: 8518B113	Date: 2012/07/27
PARSONS		Drawing No.: 5

Ref.: S-34-P

BH6 — Screen Interval: 2.0 - 4.7 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2008/12/11 (low flow)	Sheen									
2010/03/16	450	47	1500	3500	5600	650	2100	730	-	<0.5
2010/06/03	330	140	1900	5100	8700	2800	420	270	-	<0.5
2010/07/23	29	12	82	280	250	3000	280	180	-	<0.5
2010/11/17	38	30	880	2500	4900	2400	780	430	-	<0.5
2011/06/27	260	71	1500	3600	6700	2500	450	180	-	<0.5
2011/06/27 (DUP-101)	250	66	1300	3400	6000	2600	330	120	-	<0.5
2011/10/31	440	74	2500	5200	7800	2300	<100	<100	-	<0.5
2012/06/14	210	41	1700	4200	7600	2600	<100	<100	73	0.67

BH7 — Screen Interval: 2.0 - 4.7 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2008/12/11 (low flow)	<0.2	1.3	0.8	5.2	<100	<100	<100	<100	-	1.0
2010/03/16	<0.2	<0.2	<0.2	0.6	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/11/17	<0.2	<0.2	0.2	0.6	<100	<100	200	140	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	330	<100	-	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2012/06/13	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	0.77

BH8 — Screen Interval: 4.5 - 6.0 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	140	10	610	160	910	460	<100	110	-	<0.5
2010/06/03	230	48	1200	1100	1400	550	<100	<100	-	<0.5
2010/07/23	260	15	820	390	2300	1400	<100	<100	-	<0.5
2010/11/17	130	17	780	370	2400	660	<100	<100	-	<0.5
2011/06/27	57	5.7	400	37	960	480	<100	<100	-	<0.5
2011/10/31	16	4.5	140	8.1	490	230	<100	<100	-	<0.5
2011/10/31 (DUP-2)	17	4.8	150	9.2	600	240	<100	<100	-	<0.5
2012/06/15	46	3.7	610	34	1300	820	<100	<100	<10	<0.50

BH-14 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	3.7	0.31	75	<0.40	110	<100	<100	<100	-	<0.5

BH12 — Screen Interval: 3.0 - 6.0 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	1500	230	670	290	2700	1000	<100	<100	-	<0.5
2010/03/16 (QA1)	1400	220	630	270	2800	1100	<100	<100	-	<0.5
2010/06/03	1800	3100	860	3100	9300	5000	1500	<100	-	0.8
2010/06/03 (DUP1)	1700	3000	820	3000	5500	8300	2400	<100	-	0.6
2010/07/23	2500	3400	1300	4100	8000	6700	2400	<100	-	<0.5
201007/23 (DUP1)	2500	3300	1200	4100	7800	5600	1400	<100	-	<0.5
2010/11/17	1600	2800	1100	3300	4000	7400	2600	<100	-	<0.5
2010/11/17 (DUP-1)	1400	2500	1100	3100	3200	5500	1600	<100	-	<0.5
2011/06/27	73									
2011/10/31	2									
2012/06/13	Sheen									
2012/06/15	680	490	500	450	2300	1400	<100	<100	61	1.3

BH-13 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	4.1	52	340	730	930	270	<100	<100	-	<0.5
2012/06/13	9.3	69	750	1100	2600	540	<100	<100	17	0.57

BH11 — Screen Interval: 3.1 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	0.7	14	20	200	850	460	<100	<100	-	<0.5
2010/06/03	2.0	9.8	23	140	600	110	<100	<100	-	<0.5
2010/07/23	3.0	11	31	210	450	140	<100	<100	-	<0.5
2010/11/17	9.1	2.8	44	43	360	210	<100	<100	-	<0.5
2011/06/27	96	710	540	2300	4700	1300	<100	<100	-	3.6
2011/10/31	7.9	10	27	180	610	240	<100	<100	-	<0.5
2012/06/13	64	4.2	87	47	290	120	<100	<100	<5.0	0.62

BH-10 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	10	0.27	2.8	0.67	<25	<100	<100	<100	-	<0.5
2012/06/13	76	2.7	130	42	330	200	<100	<100	<5.0	<0.50

BH-16 — Screen Interval: 2.9 - 5.9 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2012/06/13	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50
2012/06/13 (DUP-3)	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50

BH5 — Screen Interval: 1.8 - 4.6 mbgs

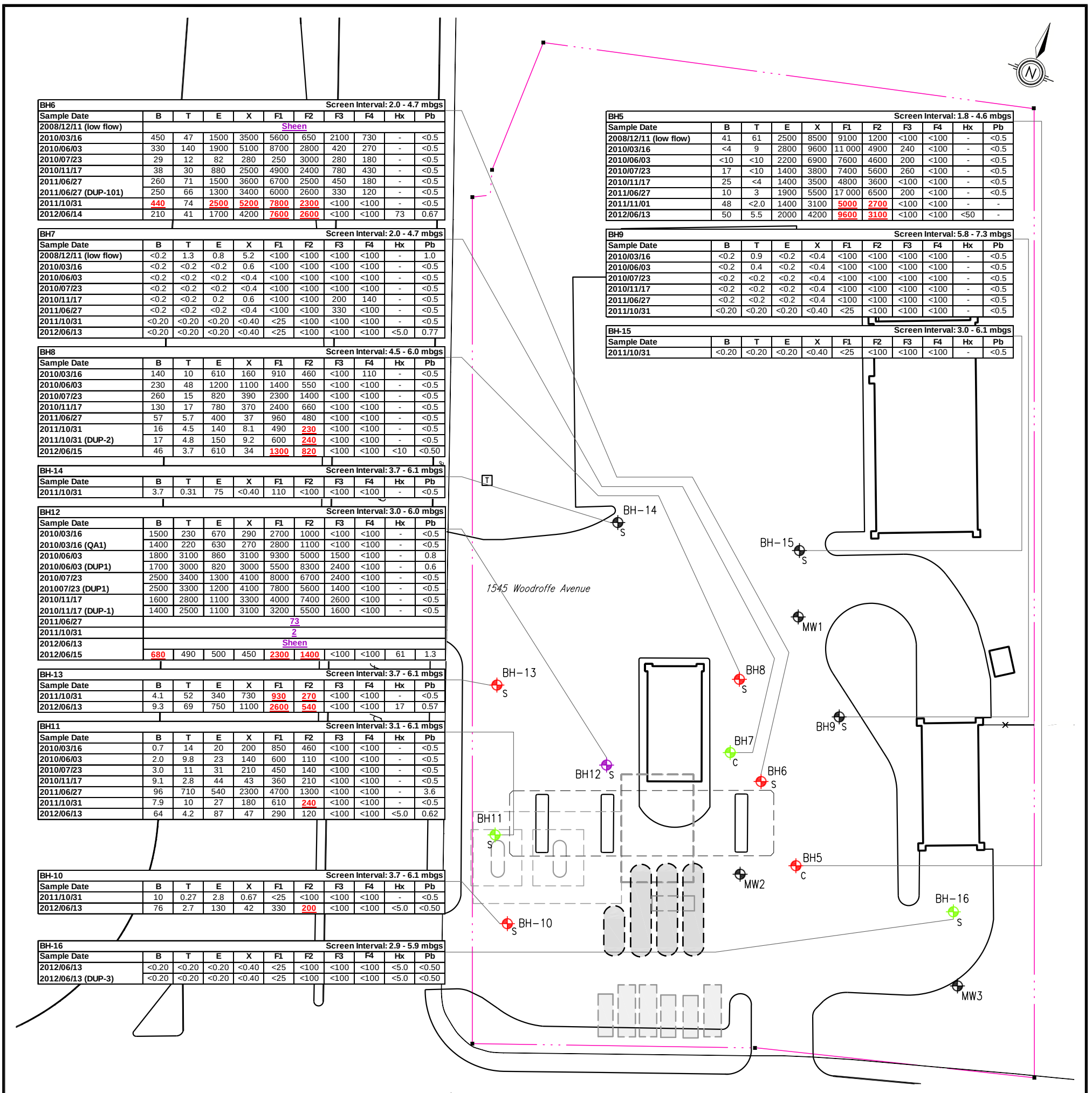
Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2008/12/11 (low flow)	41	61	2500	8500	9100	1200	<100	<100	-	<0.5
2010/03/16	<4	9	2800	9600	11 000	4900	240	<100	-	<0.5
2010/06/03	<10	<10	2200	6900	7600	4600	200	<100	-	<0.5
2010/07/23	17	<10	1400	3800	7400	5600	260	<100	-	<0.5
2010/11/17	25	<4	1400	3500	4800	3600	<100	<100	-	<0.5
2011/06/27	10	3	1900	5500	17 000	6500	200	<100	-	<0.5
2011/11/01	48	<2.0	1400	3100	5000	2700	<100	<100	-	-
2012/06/13	50	5.5	2000	4200	9600	3100	<100	<100	<50	-

BH9 — Screen Interval: 5.8 - 7.3 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	<0.2	0.9	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	0.4	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/11/17	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5

BH-15 — Screen Interval: 3.0 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5



LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
  - BH5 to BH7 by O'Connor, 2008
  - BH8, BH9, BH11 and BH12 by O'Connor, 2010
  - BH-10 and BH-13 to BH-15 by O'Connor, 2011
  - BH-16 by Parsons, 2012
  - MW1 to MW3 by Unknown
  - (S) Screened in Sand
  - (C) Screened in Silty Clay
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/L — Micrograms Per Litre

Analytical Results

All Results Reported in µg/L

- Location Where Most Recent Groundwater Sample Met Standards for All Parameters that Were Analyzed, Shown in Green
- Location Where Most Recent Groundwater Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red
- Location Where No Groundwater Samples Were Submitted From the Most Recent Sampling Event, Shown in Black
- Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple
- 1234 — Exceedances of Standards, Shown in Red and Bold
- 1234, Sheen — Free Product Apparent Thickness (in millimetres), or Sheen, Shown in Purple and Bold
- DUP — Field Duplicate Sample
- – — Not Analyzed
- < — Result Less Than Reportable Detection Limit

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/L	12 000	37 000	50 000	35 000	NS	NS	NS	NS	NS	32
Standard** µg/L	430	18 000	2300	4200	750	150	500	500	520	25

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

* **MOE Table 3 (2004)** All types of property use, medium and fine textured soils.

** **MOE Table 3 (2011)** All types of property use, medium and fine textured soils.

NS No standard

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Ref.: S-34-P

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: MLB	Page Size: 11 x 17 in	Ref. No.: 10-8518T02	
Reviewed: NLH	File No.: 8518G114	Date: 2012/07/27	
PARSONS		Drawing No.: 6	

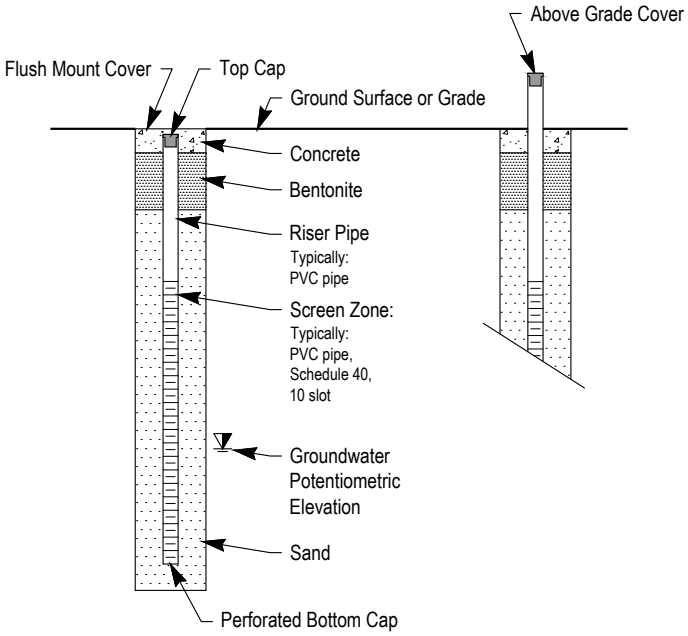
APPENDIX A

BOREHOLE LOGS

BOREHOLE LOG LEGEND

Overburden

Monitoring Well Details [a]



Backfill Legend

- Asphalt
- Concrete
- Bentonite
- Gravel
- Sand [b]
- Slough
- Drill Cuttings
- Grout

Notes

a A generalized representation to show the well construction depicted on logs. Refer to log for specific well construction and backfill details.

b #2 well pack silica sand

Sample Type

DC	Drill Cutting
G	Grab
SL	Sleeved Tube
SS	Split Spoon
ST	Shelby Tube
OS	Other

Grab Samples are obtained by a stainless steel spoon, side wall sampler, hand auger or other sampling tool.

'N' Value is determined from a Standard Penetration Test. R represents a blow count of 50 or greater for a drive distance of 150 mm or less.

Stratigraphy Legend

- Asphalt
- Boulders
- Cobbles
- Gravel
- Sand
- Silt
- Clay
- Topsoil
- Concrete
- Sandy Gravel
- Gravelly Sand
- Sandy Silt
- Sandy Clay
- Peat
- Other Constructed Layer
- Sand and Gravel
- Silty Sand
- Clayey Silt
- Silty Clay
- Organic Soil

Templates: 40, 41.

BOREHOLE LOG

PROJECT: Environmental Site Assessment	REF. NO: 10-8518T02	BOREHOLE NO: **BH-16**
LOCATION: 1545 Woodroffe Avenue, Ottawa, Ontario	TPC ELEV.: 88.80 m	START DATE: 2012/05/31
CLIENT: Imperial Oil	GRADE ELEV.: 88.95 m	COMPLETION DATE: 2012/05/31
BENCHMARK: Top of riser pipe of BH5 ASSIGNED ELEVATION: 88.79 m (Refer to drawings)		PAGE 1 of 1

Depth (m) Water Level	STRATIGRAPHY	SYMBOL	SAMPLING: NUMBER	SAMPLE TYPE	'N' VALUE	RECOVERY %	LAB SAMPLE NAME/ LAB ANALYSES	▲ SOIL VAPOUR CONCENTRATION (ppmv) 100 200 300 400	◆ SOIL VAPOUR CONCENTRATION (%LEL) 20 40 60 80	COMMENTS AND MONITORING WELL NOTES	MONITORING WELL	Depth (ft) Water Level
0	GROUND SURFACE											0
	ASPHALT (Fill)											
	GRAVEL (Fill) - gray, silty, some sand, moist		1	G	-	-						
1	SAND (Fill) - yellowish brown, medium to fine grained, some gravel, trace silt, damp		2	G	-	-	BH-16-0.6-1.2 / BTEX, PHC F1-F4, Hx, Pb, pH					5
			3	G	-	-						
2	SILT - gray, sandy and clayey, damp		4	G	-	-						
			5	SS	13	-						10
3			6	SS	2	-						
4	- wet below 4.3 m		7	NR	-	-						15
5			8	SS	-	-	BH-16-4.6-5.2 / BTEX, PHC F1-F4, Hx, Pb, pH					
	SAND - light gray, coarse to medium grained, trace gravel and silt, wet		9	SS	4	-	BH-16-5.3-5.9			Groundwater Potentiometric Surface on 2012/06/13 Monitoring Well Installed, 51 mm Dia. PVC Pipe, 10 Slot, Screened from 2.9 m to 5.9 m		20
6	END OF BOREHOLE AT 5.9 m											
	Borehole Daylighted to 2.4 m											25
7												
8												30
9												
10												

START DATE	START DEPTH	HOLE SIZE	EQUIPMENT	CONTRACTOR	GAS METER TYPE: GasTech 1238ME
2012/05/31	0.00 m	406 mm	Hydro Vacuum Excavator; Hydro Vacuum Excavating	Veolia ES Canada Services Inc.	LOGGED: LC / REVIEW: NLH / DRAFTED: MLB
2012/05/31	2.40 m	406 mm	Case CME-75; Hollow Stem Auger	George Downing Estate Drilling Inc.	

PARSONS

8518T02 BH-16, BH-201 & BH-202.GPJ PE&I-CES REPORT LOG 41 PE&I-CDN DATA.GDT PE&I-CDN LIBRARY.GLB 30/7/2012

APPENDIX B

MOE WELL REGISTRATION RECORD

Ontario — Ministry of the Environment

Measurements recorded in: ☒ Metric ☐ Imperial

Well Tag No. *(Place Sticker and/or Print Below)* A130178 (BH-16)

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	IOL IMPERIAL OIL LIMITED		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
90 WYNFORD AVENUE	TORONTO	ON	M3C1K5	4164417388

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
1545 WOODROFFE			

County/District/Municipality	City/Town/Village	Province	Postal Code
	OTTAWA	Ontario	K2G1W2

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	444138	5020375		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
ASPHALT	Ground surface		asphalt fill	0	.2
Grey	gravel	some sand	Gravel fill, silty, moist	.2	.7
yellowbrown	sand	gravel, trace silt	medium to fine, moist	.7	2.1
gray	silt	sand, clay	damp to 4.3, wet beyond 4.3	2.1	5.1
light gray	sand	trace gravel, silt	coarse to medium, wet	5.1	

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0		BENTONITE	0.06

Method of Construction

☐ Cable Tool ☐ Diamond ☐ Rotary (Conventional) ☐ Jetting ☐ Rotary (Reverse) ☐ Driving ☐ Boring ☐ Digging ☐ Air percussion ☒ Other, specify AUGER

Well Use

☐ Public ☐ Commercial ☐ Not used ☐ Domestic ☐ Municipal ☐ Dewatering ☐ Livestock ☐ Test Hole ☒ Monitoring ☐ Irrigation ☐ Cooling & Air Conditioning ☐ Industrial ☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
5.1	PVC	SCHED 40	0	2.9

Status of Well

☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☒ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☐ Abandoned, other, specify ☐ Other, specify

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
5.8	PVC	10	2.9	5.9

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping: hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

Well production (l/min / GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

USE FIGURE PROVIDED AND ATTACHED

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
GEORGE DOWNING ESTATE DRILLING	1844

Business Address (Street Number/Name)	Municipality
410 RUE PRINCIPALE	GRENVILLE-SUR-LA ROUGE

Province	Postal Code	Business E-mail Address
QC	J0V1B0	downing@hawk.igs.net

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
8192426466	DOWNING, STEPHEN

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3326		2012 10 10

Well owner's information package delivered: ☐ Yes ☐ No

Date Package Delivered: Y Y Y Y M M D D

Date Work Completed: 2012 05 31

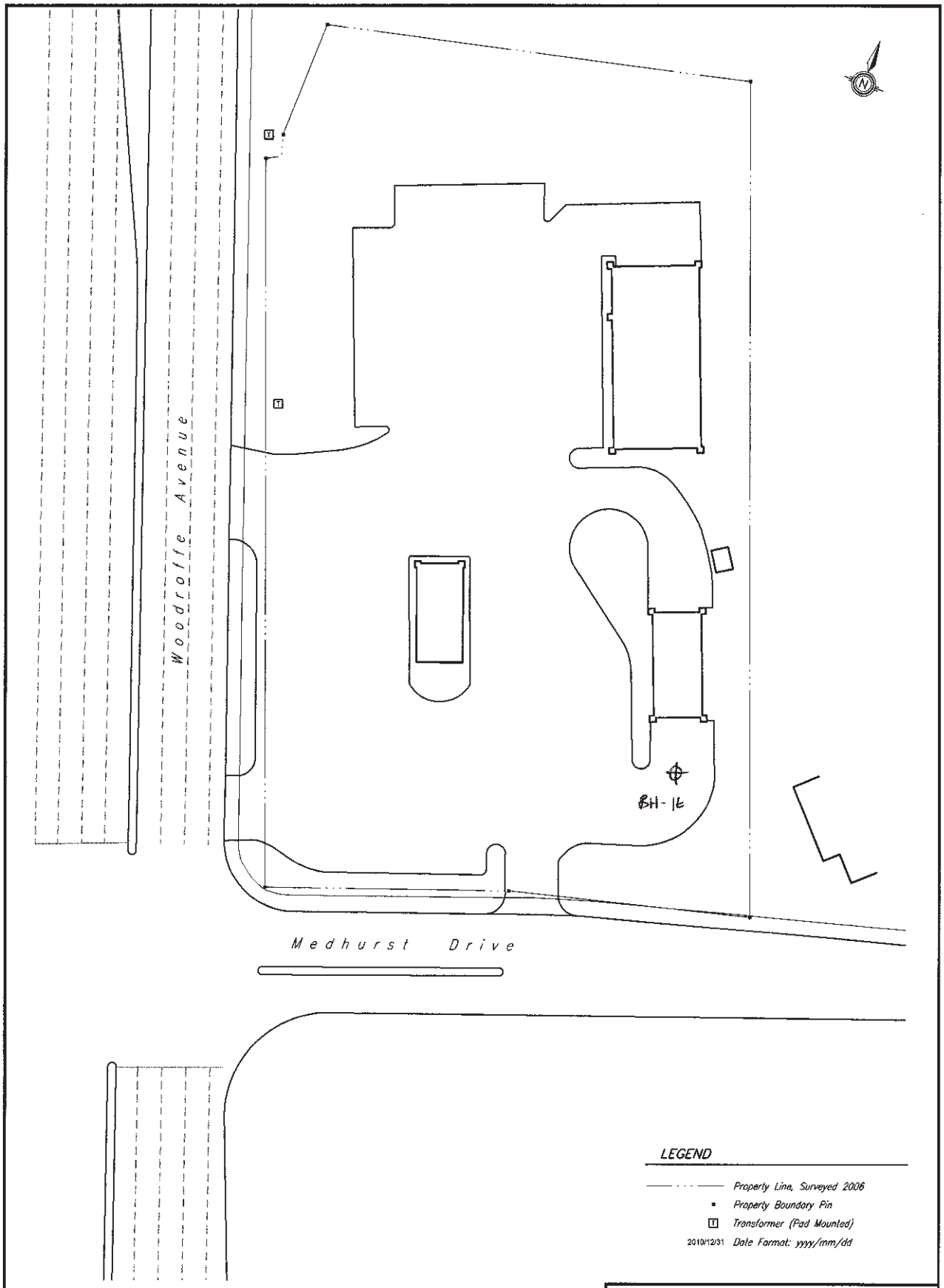
Ministry Use Only

Audit No: Z153929

Received:

0506E (2007/12) © Queen's Printer for Ontario, 2007

Ministry's Copy



LEGEND

- *Property Line, Surveyed 2006*
- *Property Boundary Pin*
- *Transformer (Pad Mounted)*
- 2010/12/31 *Date Format: yyyy/mm/dd*

NOTE: All features are approximate.
REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Original Scale 1:500

Site Plan

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: TFY	Page Size: 11 x 17 in.	Ref. No.: 10-8518T02
Reviewed: LC	File No.: 8518S103	Date: 2012/05/30
O'CONNOR ASSOCIATES		Drawing No.: -

PM:15-34-P

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS – SOIL AND GROUNDWATER

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69494

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280939
Received: 2012/06/02, 09:30

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	CAM SOP-00316	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	1	CAM SOP-00316	CCME CWS
Total Metals Analysis by ICP	2	CAM SOP-00408	SW-846 6010C
Moisture	2	CAM SOP-00445	R.Carter,1993
pH CaCl2 EXTRACT	2	CAM SOP-00413	SM 4500H+ B

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69494

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/11

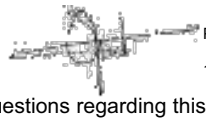
CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280939
Received: 2012/06/02, 09:30

were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

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

Encryption Key



Patricia Opoku
11 Jun 2012 13:25:13 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B280939
Report Date: 2012/06/11

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

LEAD IN SOIL (SOIL)

Maxxam ID		NR1908	NR1908		NR1909		
Sampling Date		2012/05/31 15:00	2012/05/31 15:00		2012/05/31 15:30		
COC Number		69494	69494		69494		
	Units	**BH-16-0.6-1.2**	**BH-16-0.6-1.2 Lab-Dup**	**QC Batch**	**BH-16-4.6-5.2**	**RDL**	**QC Batch**
Acid Extractable Lead (Pb)	ug/g	24	23	2873711	7.1	5.0	2871061

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280939
Report Date: 2012/06/11

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN SOIL (SOIL)

Maxxam ID		NR1908	NR1909	NR1909		
Sampling Date		2012/05/31 15:00	2012/05/31 15:30	2012/05/31 15:30		
COC Number		69494	69494	69494		
	Units	**BH-16-0.6-1.2**	**BH-16-4.6-5.2**	**BH-16-4.6-5.2 Lab-Dup**	**RDL**	**QC Batch**
Moisture	%	11	27	25	1.0	2870701
Benzene	ug/g	<0.020	<0.020		0.020	2873390
Toluene	ug/g	<0.020	<0.020		0.020	2873390
Ethylbenzene	ug/g	<0.020	<0.020		0.020	2873390
o-Xylene	ug/g	<0.020	<0.020		0.020	2873390
p+m-Xylene	ug/g	<0.040	<0.040		0.040	2873390
Total Xylenes	ug/g	<0.040	<0.040		0.040	2873390
Hexane	ug/g	<0.50	<0.50		0.50	2873390
F1 (C6-C10)	ug/g	<10	<10		10	2873390
F1 (C6-C10) - BTEX	ug/g	<10	<10		10	2873390
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	2871525
F3 (C16-C34 Hydrocarbons)	ug/g	60	<10	<10	10	2871525
F4 (C34-C50 Hydrocarbons)	ug/g	110	<10	<10	10	2871525
Reached Baseline at C50	ug/g	No	Yes	Yes		2871525
Extraction Surrogate Recovery (%)						
D10-Ethylbenzene	%	84	87			2873390
o-Terphenyl	%	107	106	108		2871525
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%	105	109			2873390
4-Bromofluorobenzene	%	106	104			2873390
D4-1,2-Dichloroethane	%	101	105			2873390

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280939
Report Date: 2012/06/11

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

RESULTS OF ANALYSES OF SOIL

Maxxam ID		NR1908	NR1910	
Sampling Date		2012/05/31 15:00	2012/05/31 16:00	
COC Number		69494	69494	
	Units	**BH-16-0.6-1.2**	**BH-16-5.3-5.9**	**QC Batch**
Available (CaCl2) pH	pH	7.41	7.50	2873107

QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280939
Report Date: 2012/06/11

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		NR1908	NR1908		
Sampling Date		2012/05/31 15:00	2012/05/31 15:00		
COC Number		69494	69494		
	Units	**BH-16-0.6-1.2**	**BH-16-0.6-1.2 Lab-Dup**	**RDL**	**QC Batch**
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	730	730	200	2873393

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280939
Report Date: 2012/06/11

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NR1908 **Collected** 2012/05/31
Sample ID BH-16-0.6-1.2 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/07	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871525	2012/06/05	2012/06/06	DORINA POPA
F4G (CCME Hydrocarbons Gravimetric)	BAL	2873393	2012/06/07	2012/06/07	RAHEELA USMANI
Total Metals Analysis by ICP	ICP	2873711	2012/06/07	2012/06/08	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870701	N/A	2012/06/06	VALENTINA KAFTANI
pH CaCl2 EXTRACT		2873107	2012/06/06	2012/06/07	XUANHONG QIU

Maxxam ID NR1908 Dup **Collected** 2012/05/31
Sample ID BH-16-0.6-1.2 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
F4G (CCME Hydrocarbons Gravimetric)	BAL	2873393	2012/06/07	2012/06/07	RAHEELA USMANI
Total Metals Analysis by ICP	ICP	2873711	2012/06/07	2012/06/08	SUBAN KANAPATHIPPLLAI

Maxxam ID NR1909 **Collected** 2012/05/31
Sample ID BH-16-4.6-5.2 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/08	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871525	2012/06/05	2012/06/06	DORINA POPA
Total Metals Analysis by ICP	ICP	2871061	2012/06/05	2012/06/05	SUBAN KANAPATHIPPLLAI
Moisture	BAL	2870701	N/A	2012/06/06	VALENTINA KAFTANI

Maxxam ID NR1909 Dup **Collected** 2012/05/31
Sample ID BH-16-4.6-5.2 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	2871525	2012/06/05	2012/06/07	DORINA POPA
Moisture	BAL	2870701	N/A	2012/06/06	VALENTINA KAFTANI

Maxxam ID NR1910 **Collected** 2012/05/31
Sample ID BH-16-5.3-5.9 **Shipped** 2012/06/01
Matrix Soil **Received** 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
pH CaCl2 EXTRACT		2873107	2012/06/07	2012/06/07	XUANHONG QIU

Maxxam Job #: B280939
Report Date: 2012/06/11

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B280939

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2871061	SUK	Method Blank	Acid Extractable Lead (Pb)	2012/06/05	<5.0		ug/g	
2871525	DPO	Method Blank	o-Terphenyl	2012/06/06		109	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/06	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2012/06/06	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2012/06/06	<10		ug/g	
2873390	ABD	Method Blank	1,4-Difluorobenzene	2012/06/07		106	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		105	%	60 - 140
			D10-Ethylbenzene	2012/06/07		86	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		103	%	60 - 140
			Benzene	2012/06/07	<0.020		ug/g	
			Toluene	2012/06/07	<0.020		ug/g	
			Ethylbenzene	2012/06/07	<0.020		ug/g	
			o-Xylene	2012/06/07	<0.020		ug/g	
			p+m-Xylene	2012/06/07	<0.040		ug/g	
			Total Xylenes	2012/06/07	<0.040		ug/g	
			Hexane	2012/06/07	<0.50		ug/g	
			F1 (C6-C10)	2012/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2012/06/07	<10		ug/g	
2873393	RUS	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2012/06/07	<100		ug/g	
2873711	SUK	Method Blank	Acid Extractable Lead (Pb)	2012/06/08	<5.0		ug/g	
2873393	RUS	RPD [NR1908-03]	F4G-sg (Grav. Heavy Hydrocarbons)	2012/06/07	NC		%	50
2873711	SUK	RPD [NR1908-01]	Acid Extractable Lead (Pb)	2012/06/08	NC		%	30
2870701	XYA	RPD [NR1909-02]	Moisture	2012/06/06	5.4		%	20
2871525	DPO	RPD [NR1909-02]	F2 (C10-C16 Hydrocarbons)	2012/06/07	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2012/06/07	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2012/06/07	NC		%	30
		Matrix Spike [NR1909-02]	o-Terphenyl	2012/06/06		100	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/06		107	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/06		109	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/06		103	%	50 - 130
2873393	RUS	Matrix Spike [NR1908-03]	F4G-sg (Grav. Heavy Hydrocarbons)	2012/06/07		90	%	65 - 135
2873711	SUK	Matrix Spike [NR1908-01]	Acid Extractable Lead (Pb)	2012/06/08		95	%	75 - 125
2871061	SUK	LCS	Acid Extractable Lead (Pb)	2012/06/05		107	%	80 - 120
2871525	DPO	LCS	o-Terphenyl	2012/06/06		104	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/06		106	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/06		107	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/06		102	%	70 - 130
2873390	ABD	LCS	1,4-Difluorobenzene	2012/06/07		107	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		107	%	60 - 140
			D10-Ethylbenzene	2012/06/07		96	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		102	%	60 - 140
			Benzene	2012/06/07		108	%	60 - 140
			Toluene	2012/06/07		97	%	60 - 140
			Ethylbenzene	2012/06/07		116	%	60 - 140
			o-Xylene	2012/06/07		99	%	60 - 140
			p+m-Xylene	2012/06/07		104	%	60 - 140
			Hexane	2012/06/07		83	%	60 - 140
			F1 (C6-C10)	2012/06/07		89	%	60 - 140
2873393	RUS	LCS	F4G-sg (Grav. Heavy Hydrocarbons)	2012/06/07		91	%	65 - 135
2873711	SUK	LCS	Acid Extractable Lead (Pb)	2012/06/08		105	%	80 - 120

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report (Continued)

Maxxam Job Number: B280939

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B280939

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

CRISTINA CARRIERE, Scientific Services

EWA PRANJIC, M.Sc., C.Chem, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 69494

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 449 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (hexane)	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	PH	Poor sample recovery + insufficient # of bottles. Proceed with analysis as is.
1 BH-16-0.6-1.2			X		5	12/05/31	15:00			X	X	X					X											X	X
2 BH-16-4.6-5.2			X		4	12/05/31	15:30			X	X	X					X												X	
3 BH-16-5.3-5.9			X		1	12/05/31	16:00																					X	
4																													
5																													
6																													
7																													
8																													
9																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 88001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC (please indicate which Reg. version and if RSC required)
☐ PWQO ☐ CCME ☐ SUR/STM ☐ ODWS
Other: _____

SPECIAL INSTRUCTIONS
Test samples as per TOR
Due to the nature of samples headspace may be present
Proceed with analysis as is.
ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
1	PRESENT	✓			PRESENT				PRESENT		
TEMP 3/2/1°C	INTACT	✓		TEMP 1 2 3	INTACT			TEMP 1 2 3	INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2012/06/01	12:00	1. DAVID CHAN	2012/06/02	09:30
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB # B280939
SAMPLES
LABELED BY: DKN
VERIFIED BY: MAF

COC -1012 (01/10). IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/05/31

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B280939*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Nicole Hottot* Data Reviewed by (Signature): N. Hottot

Review Date: *2012/06/15*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69374

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280942
Received: 2012/06/02, 09:30

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Soil	1	CAM SOP-00315	CCME CWS

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69374

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

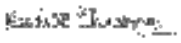
Report Date: 2012/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B280942
Received: 2012/06/02, 09:30

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

Encryption Key



Kudrat Cheema
08 Jun 2012 15:20:25 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		NR1915		
Sampling Date		2012/05/31 17:00		
COC Number		69374		
	Units	**FIELD BLANK-1**	**RDL**	**QC Batch**
Benzene	ug/g	<0.020	0.020	2873390
Toluene	ug/g	<0.020	0.020	2873390
Ethylbenzene	ug/g	<0.020	0.020	2873390
o-Xylene	ug/g	<0.020	0.020	2873390
p+m-Xylene	ug/g	<0.040	0.040	2873390
Total Xylenes	ug/g	<0.040	0.040	2873390
Hexane	ug/g	<0.50	0.50	2873390
F1 (C6-C10)	ug/g	<10	10	2873390
F1 (C6-C10) - BTEX	ug/g	<10	10	2873390
Extraction Surrogate Recovery (%)				
D10-Ethylbenzene	%	88		2873390
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	105		2873390
4-Bromofluorobenzene	%	104		2873390
D4-1,2-Dichloroethane	%	104		2873390

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NR1915
Sample ID FIELD BLANK-1
Matrix Soil

Collected 2012/05/31
Shipped 2012/06/01
Received 2012/06/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	2873390	2012/06/04	2012/06/08	ABDI MOHAMUD

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B280942
Report Date: 2012/06/08

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	2.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B280942

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2873390	ABD	Method Blank	1,4-Difluorobenzene	2012/06/07		106	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		105	%	60 - 140
			D10-Ethylbenzene	2012/06/07		86	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		103	%	60 - 140
			Benzene	2012/06/07	<0.020		ug/g	
			Toluene	2012/06/07	<0.020		ug/g	
			Ethylbenzene	2012/06/07	<0.020		ug/g	
			o-Xylene	2012/06/07	<0.020		ug/g	
			p+m-Xylene	2012/06/07	<0.040		ug/g	
			Total Xylenes	2012/06/07	<0.040		ug/g	
			Hexane	2012/06/07	<0.50		ug/g	
			F1 (C6-C10)	2012/06/07	<10		ug/g	
			F1 (C6-C10) - BTEX	2012/06/07	<10		ug/g	
		LCS	1,4-Difluorobenzene	2012/06/07		107	%	60 - 140
			4-Bromofluorobenzene	2012/06/07		107	%	60 - 140
			D10-Ethylbenzene	2012/06/07		96	%	60 - 140
			D4-1,2-Dichloroethane	2012/06/07		102	%	60 - 140
			Benzene	2012/06/07		108	%	60 - 140
			Toluene	2012/06/07		97	%	60 - 140
			Ethylbenzene	2012/06/07		116	%	60 - 140
			o-Xylene	2012/06/07		99	%	60 - 140
			p+m-Xylene	2012/06/07		104	%	60 - 140
			Hexane	2012/06/07		83	%	60 - 140
			F1 (C6-C10)	2012/06/07		89	%	60 - 140

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B280942

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

Suzana Popovic

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

Page 1 of 1

C of C # 69374

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: ~~Nancy Hazell~~ LC Oconnor Associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: volorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (hexane)	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	FIELD BLANK-1				X	2	12/05/31	17:00			X	X																
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO ☐ ODWS 1/c/c medium/fine grained
☐ Other _____

SPECIAL INSTRUCTIONS: Test samples as per TDG

ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐

Date Required

COOLER ID 1	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 3/2/1°C (1 2 3)	PRESENT	✓		TEMP (1 2 3)	PRESENT			TEMP (1 2 3)	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. [signature] LAILA CHALATI	2012/06/01	12:00	1. [signature] DAVID CHAN	2012/06/02	09:30
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB #: B280942

SAMPLES
LABELED BY: DKN
VERIFIED BY: MAF

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/05/31

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B280942*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*Yes*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Nicole Hottot* Data Reviewed by (Signature): N. Hottot

Review Date: *2012/06/15*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69726

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289234
Received: 2012/06/15, 13:08

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69726

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289234
Received: 2012/06/15, 13:08

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

Encryption Key

Kudrat Cheema

25 Jun 2012 10:21:26 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B289234
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

LEAD (DISSOLVED) IN WATER

Maxxam ID		NV1404	NV1405		NV1406		
Sampling Date		2012/06/13 11:15	2012/06/13 11:15		2012/06/13 13:00		
COC Number		69726	69726		69726		
	Units	**BH-16**	**DUP-3**	**QC Batch**	**BH-10**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	2884856	<0.50	0.50	2887165

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289234
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV1404	NV1404	NV1405	NV1406		
Sampling Date		2012/06/13 11:15	2012/06/13 11:15	2012/06/13 11:15	2012/06/13 13:00		
COC Number		69726	69726	69726	69726		
	Units	**BH-16**	**BH-16 Lab-Dup**	**DUP-3**	**BH-10**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	<0.20	76	0.20	2887051
Toluene	ug/L	<0.20	<0.20	<0.20	2.7	0.20	2887051
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	130	0.20	2887051
o-Xylene	ug/L	<0.20	<0.20	<0.20	9.9	0.20	2887051
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	32	0.40	2887051
Total Xylenes	ug/L	<0.40	<0.40	<0.40	42	0.40	2887051
Hexane	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	2887051
F1 (C6-C10)	ug/L	<25	<25	<25	580	25	2887051
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	330	25	2887051
F2 (C10-C16 Hydrocarbons)	ug/L	<100		<100	200	100	2886469
F3 (C16-C34 Hydrocarbons)	ug/L	<100		<100	<100	100	2886469
F4 (C34-C50 Hydrocarbons)	ug/L	<100		<100	<100	100	2886469
Reached Baseline at C50	ug/L	Yes		Yes	Yes		2886469
Extraction Surrogate Recovery (%)							
o-Terphenyl	%	109		110	116		2886469
Instrument Surrogate Recovery (%)							
1,4-Difluorobenzene	%	104	102	103	99		2887051
4-Bromofluorobenzene	%	99	97	97	101		2887051
D10-Ethylbenzene	%	104	96	99	101		2887051
D4-1,2-Dichloroethane	%	108	108	106	98		2887051

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289234
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NV1404 **Collected** 2012/06/13
Sample ID BH-16 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887051	N/A	2012/06/21	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2886469	2012/06/20	2012/06/21	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2884856	N/A	2012/06/20	PREMPAL BHATTI

Maxxam ID NV1404 Dup **Collected** 2012/06/13
Sample ID BH-16 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887051	N/A	2012/06/21	ABDI MOHAMUD

Maxxam ID NV1405 **Collected** 2012/06/13
Sample ID DUP-3 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887051	N/A	2012/06/21	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2886469	2012/06/20	2012/06/21	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2884856	N/A	2012/06/20	PREMPAL BHATTI

Maxxam ID NV1406 **Collected** 2012/06/13
Sample ID BH-10 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887051	N/A	2012/06/22	ABDI MOHAMUD
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2886469	2012/06/20	2012/06/21	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289234
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	0.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

SQC trend rule failure for Lead, Batch 2887165. 4 of 5 consecutive points greater than 1SD above the mean.
SQC Trend rule failure for Berrylium, Batch 2887165. 7 consecutive points rising

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B289234

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2884856	PBA	Method Blank	Dissolved Lead (Pb)	2012/06/20	<0.50		ug/L	
2886469	NCI	Method Blank	o-Terphenyl	2012/06/20		122	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/20	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2012/06/20	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2012/06/20	<100		ug/L	
2887051	ABD	Method Blank	1,4-Difluorobenzene	2012/06/21		103	%	70 - 130
			4-Bromofluorobenzene	2012/06/21		90	%	70 - 130
			D10-Ethylbenzene	2012/06/21		88	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/21		115	%	70 - 130
			Benzene	2012/06/21	<0.20		ug/L	
			Toluene	2012/06/21	<0.20		ug/L	
			Ethylbenzene	2012/06/21	<0.20		ug/L	
			o-Xylene	2012/06/21	<0.20		ug/L	
			p+m-Xylene	2012/06/21	<0.40		ug/L	
			Total Xylenes	2012/06/21	<0.40		ug/L	
			Hexane	2012/06/21	<5.0		ug/L	
			F1 (C6-C10)	2012/06/21	<25		ug/L	
			F1 (C6-C10) - BTEX	2012/06/21	<25		ug/L	
2887165	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/21	<0.50		ug/L	
2887051	ABD	RPD [NV1404-04]	Benzene	2012/06/21	NC		%	30
			Toluene	2012/06/21	NC		%	30
			Ethylbenzene	2012/06/21	NC		%	30
			o-Xylene	2012/06/21	NC		%	30
			p+m-Xylene	2012/06/21	NC		%	30
			Total Xylenes	2012/06/21	NC		%	30
			Hexane	2012/06/21	NC		%	30
			F1 (C6-C10)	2012/06/21	NC		%	30
			F1 (C6-C10) - BTEX	2012/06/21	NC		%	30
		Matrix Spike [NV1404-04]						
			1,4-Difluorobenzene	2012/06/21		95	%	70 - 130
			4-Bromofluorobenzene	2012/06/21		96	%	70 - 130
			D10-Ethylbenzene	2012/06/21		101	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/21		104	%	70 - 130
			Benzene	2012/06/21		114	%	70 - 130
			Toluene	2012/06/21		97	%	70 - 130
			Ethylbenzene	2012/06/21		106	%	70 - 130
			o-Xylene	2012/06/21		105	%	70 - 130
			p+m-Xylene	2012/06/21		97	%	70 - 130
			Hexane	2012/06/21		104	%	70 - 130
			F1 (C6-C10)	2012/06/21		83	%	70 - 130
2884856	PBA	LCS	Dissolved Lead (Pb)	2012/06/20		97	%	80 - 120
2886469	NCI	LCS	o-Terphenyl	2012/06/21		118	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21		123	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/21		118	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/21		111	%	70 - 130
2887051	ABD	LCS	1,4-Difluorobenzene	2012/06/21		101	%	70 - 130
			4-Bromofluorobenzene	2012/06/21		101	%	70 - 130
			D10-Ethylbenzene	2012/06/21		109	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/21		107	%	70 - 130
			Benzene	2012/06/21		123	%	70 - 130
			Toluene	2012/06/21		103	%	70 - 130
			Ethylbenzene	2012/06/21		116	%	70 - 130
			o-Xylene	2012/06/21		110	%	70 - 130
			p+m-Xylene	2012/06/21		99	%	70 - 130
			Hexane	2012/06/21		126	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report (Continued)

Maxxam Job Number: B289234

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887051	ABD	LCS	F1 (C6-C10)	2012/06/21		88	%	70 - 130
2887165	HRE	LCS	Dissolved Lead (Pb)	2012/06/21		101	%	80 - 120

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.
LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B289234

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

BRAD NEWMAN, Scientific Specialist

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 69726

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: Oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416 441 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX, hexane	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH-16	X				8	12/06/13	11:15	X		X	X	X					X											
2	DUP-3	X				8	12/06/13	11:15	X		X	X	X					X											
3	BH-10	X				8	12/06/13	13:00	X		X	X	X					X											
4																													
5																													
6																													
7																													
8																													
9																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 88001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1107092 7

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC
(please indicate which Reg. version and if RSC required)
[ ] PWQO 1/4C fine/med grained [ ] ODWS
[ ] Other _____

SPECIAL INSTRUCTIONS
test samples as per TDG Due to the nature of samples headspace bubbles + sediment may be present. Proceed with analysis as is.
ICE - YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) [X]
Rush (3 days) [ ]
(2 days) [ ]
(1 day) [ ]
(same day) [ ]
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
1.	PRESENT	✓			PRESENT				PRESENT		
TEMP 0/0/0°C	INTACT	✓		TEMP	INTACT			TEMP	INTACT		
1 2 3				1 2 3				1 2 3			

LAB USE ONLY
MAXXAM JOB # B289234

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. LAILA CHALATI	2012/06/14	17:00	1. Shruti SHRUTI PATEL	2012/06/15	13:08
2.			2.		
3.			3.		

SAMPLES
LABELED BY: DKN
VERIFIED BY: ABH

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/06/13

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B289234*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*No*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2012/06/28*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69730

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289281
Received: 2012/06/15, 13:08

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	4	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	4	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69730

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289281
Received: 2012/06/15, 13:08

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

Encryption Key

Kudrat Cheema

25 Jun 2012 10:46:22 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B289281
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

LEAD (DISSOLVED) IN WATER

Maxxam ID		NV1656	NV1657		NV1658	NV1658		
Sampling Date		2012/06/13 14:00	2012/06/13 15:00		2012/06/13 16:45	2012/06/13 16:45		
COC Number		69730	69730		69730	69730		
	Units	**BH11**	**BH-13**	**QC Batch**	**BH7**	**BH7 Lab-Dup**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	0.62	0.57	2887165	0.77	1.0	0.50	2887690

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289281
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV1656	NV1656		NV1657		NV1658		
Sampling Date		2012/06/13 14:00	2012/06/13 14:00		2012/06/13 15:00		2012/06/13 16:45		
COC Number		69730	69730		69730		69730		
	Units	**BH11**	**BH11 Lab-Dup**	**RDL**	**BH-13**	**RDL**	**BH7**	**RDL**	**QC Batch**
Benzene	ug/L	64	62	0.20	9.3	0.40	<0.20	0.20	2887160
Toluene	ug/L	4.2	4.1	0.20	69	0.40	<0.20	0.20	2887160
Ethylbenzene	ug/L	87	84	0.20	750	0.40	<0.20	0.20	2887160
o-Xylene	ug/L	19	18	0.20	160	0.40	<0.20	0.20	2887160
p+m-Xylene	ug/L	28	28	0.40	960	0.80	<0.40	0.40	2887160
Total Xylenes	ug/L	47	46	0.40	1100	0.80	<0.40	0.40	2887160
Hexane	ug/L	<5.0	<5.0	5.0	17	10	<5.0	5.0	2887160
F1 (C6-C10)	ug/L	490	500	25	4500	50	<25	25	2887160
F1 (C6-C10) - BTEX	ug/L	290	300	25	2600	50	<25	25	2887160
F2 (C10-C16 Hydrocarbons)	ug/L	120		100	540	100	<100	100	2885641
F3 (C16-C34 Hydrocarbons)	ug/L	<100		100	<100	100	<100	100	2885641
F4 (C34-C50 Hydrocarbons)	ug/L	<100		100	<100	100	<100	100	2885641
Reached Baseline at C50	ug/L	Yes			Yes		Yes		2885641
Extraction Surrogate Recovery (%)									
o-Terphenyl	%	108			108		112		2885641
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	99	99		98		96		2887160
4-Bromofluorobenzene	%	103	102		104		99		2887160
D10-Ethylbenzene	%	84	87		92		101		2887160
D4-1,2-Dichloroethane	%	98	98		94		96		2887160

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289281
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV1658		NV1659		
Sampling Date		2012/06/13 16:45		2012/06/13 16:00		
COC Number		69730		69730		
	Units	**BH7 Lab-Dup**	**RDL**	**BH5**	**RDL**	**QC Batch**
Benzene	ug/L		0.20	50	2.0	2887160
Toluene	ug/L		0.20	5.5	2.0	2887160
Ethylbenzene	ug/L		0.20	2000	2.0	2887160
o-Xylene	ug/L		0.20	150	2.0	2887160
p+m-Xylene	ug/L		0.40	4000	4.0	2887160
Total Xylenes	ug/L		0.40	4200	4.0	2887160
Hexane	ug/L		5.0	<50	50	2887160
F1 (C6-C10)	ug/L		25	16000	250	2887160
F1 (C6-C10) - BTEX	ug/L		25	9600	250	2887160
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	3100	100	2885641
F3 (C16-C34 Hydrocarbons)	ug/L	<100	100	<100	100	2885641
F4 (C34-C50 Hydrocarbons)	ug/L	<100	100	<100	100	2885641
Reached Baseline at C50	ug/L	Yes		Yes		2885641
Extraction Surrogate Recovery (%)						
o-Terphenyl	%	109		111		2885641
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene	%			98		2887160
4-Bromofluorobenzene	%			105		2887160
D10-Ethylbenzene	%			86		2887160
D4-1,2-Dichloroethane	%			100		2887160

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289281
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NV1656 **Collected** 2012/06/13
Sample ID BH11 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887160	N/A	2012/06/21	ABDIKARIM ALI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/20	RAVINDER GAIDHU
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1656 Dup **Collected** 2012/06/13
Sample ID BH11 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887160	N/A	2012/06/21	ABDIKARIM ALI

Maxxam ID NV1657 **Collected** 2012/06/13
Sample ID BH-13 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887160	N/A	2012/06/22	ABDIKARIM ALI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/20	RAVINDER GAIDHU
Dissolved Metals by ICPMS	ICP/MS	2887165	N/A	2012/06/21	HUA REN

Maxxam ID NV1658 **Collected** 2012/06/13
Sample ID BH7 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887160	N/A	2012/06/22	ABDIKARIM ALI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/20	RAVINDER GAIDHU
Dissolved Metals by ICPMS	ICP/MS	2887690	N/A	2012/06/22	HUA REN

Maxxam ID NV1658 Dup **Collected** 2012/06/13
Sample ID BH7 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/21	RAVINDER GAIDHU
Dissolved Metals by ICPMS	ICP/MS	2887690	N/A	2012/06/22	HUA REN

Maxxam ID NV1659 **Collected** 2012/06/13
Sample ID BH5 **Shipped** 2012/06/14
Matrix Water **Received** 2012/06/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887160	N/A	2012/06/22	ABDIKARIM ALI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2885641	2012/06/19	2012/06/21	RAVINDER GAIDHU

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B289281
Report Date: 2012/06/25

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	0.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

SQC trend rule failure for Lead, Batch 2887165. 4 of 5 consecutive points greater than 1SD above the mean.
SQC Trend rule failure for Berrylium, Batch 2887165. 7 consecutive points rising.

SQC Trend rule failure for Berrylium, Batch 2887690. 7 consecutive points rising.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B289281

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2885641	RGA	Method Blank	o-Terphenyl	2012/06/20		111	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/20	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2012/06/20	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2012/06/20	<100		ug/L	
2887160	AAI	Method Blank	1,4-Difluorobenzene	2012/06/22		100	%	70 - 130
			4-Bromofluorobenzene	2012/06/22		100	%	70 - 130
			D10-Ethylbenzene	2012/06/22		97	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/22		97	%	70 - 130
			Benzene	2012/06/22	<0.20		ug/L	
			Toluene	2012/06/22	<0.20		ug/L	
			Ethylbenzene	2012/06/22	<0.20		ug/L	
			o-Xylene	2012/06/22	<0.20		ug/L	
			p+m-Xylene	2012/06/22	<0.40		ug/L	
			Total Xylenes	2012/06/22	<0.40		ug/L	
			Hexane	2012/06/22	<5.0		ug/L	
			F1 (C6-C10)	2012/06/22	<25		ug/L	
			F1 (C6-C10) - BTEX	2012/06/22	<25		ug/L	
2887165	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/21	<0.50		ug/L	
2887690	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/22	<0.50		ug/L	
2887160	AAI	RPD [NV1656-04]	Benzene	2012/06/21	3.0		%	30
			Toluene	2012/06/21	2.9		%	30
			Ethylbenzene	2012/06/21	3.3		%	30
			o-Xylene	2012/06/21	4.1		%	30
			p+m-Xylene	2012/06/21	2.5		%	30
			Total Xylenes	2012/06/21	3.1		%	30
			Hexane	2012/06/21	NC		%	30
			F1 (C6-C10)	2012/06/21	1.4		%	30
			F1 (C6-C10) - BTEX	2012/06/21	4.4		%	30
2885641	RGA	RPD [NV1658-02]	F2 (C10-C16 Hydrocarbons)	2012/06/21	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2012/06/21	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2012/06/21	NC		%	30
2887690	HRE	RPD [NV1658-03]	Dissolved Lead (Pb)	2012/06/22	NC		%	20
2885641	RGA	Matrix Spike [NV1657-02]	o-Terphenyl	2012/06/20		109	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/20		94	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/20		107	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/20		102	%	50 - 130
2887160	AAI	Matrix Spike [NV1656-04]	1,4-Difluorobenzene	2012/06/21		99	%	70 - 130
			4-Bromofluorobenzene	2012/06/21		102	%	70 - 130
			D10-Ethylbenzene	2012/06/21		104	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/21		99	%	70 - 130
			Benzene	2012/06/21		NC (1)	%	70 - 130
			Toluene	2012/06/21		119	%	70 - 130
			Ethylbenzene	2012/06/21		NC (1)	%	70 - 130
			o-Xylene	2012/06/21		123	%	70 - 130
			p+m-Xylene	2012/06/21		116	%	70 - 130
			Hexane	2012/06/21		125	%	70 - 130
			F1 (C6-C10)	2012/06/21		96	%	70 - 130
2887690	HRE	Matrix Spike [NV1658-03]	Dissolved Lead (Pb)	2012/06/22		92	%	80 - 120
2885641	RGA	LCS	o-Terphenyl	2012/06/20		111	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/20		96	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/20		108	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/20		102	%	70 - 130

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626;1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report (Continued)

Maxxam Job Number: B289281

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887160	AAI	LCS	1,4-Difluorobenzene	2012/06/21		99	%	70 - 130
			4-Bromofluorobenzene	2012/06/21		101	%	70 - 130
			D10-Ethylbenzene	2012/06/21		101	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/21		97	%	70 - 130
			Benzene	2012/06/21		107	%	70 - 130
			Toluene	2012/06/21		103	%	70 - 130
			Ethylbenzene	2012/06/21		108	%	70 - 130
			o-Xylene	2012/06/21		105	%	70 - 130
			p+m-Xylene	2012/06/21		97	%	70 - 130
			Hexane	2012/06/21		102	%	70 - 130
			F1 (C6-C10)	2012/06/21		96	%	70 - 130
2887165	HRE	LCS	Dissolved Lead (Pb)	2012/06/21		101	%	80 - 120
2887690	HRE	LCS	Dissolved Lead (Pb)	2012/06/22		97	%	80 - 120

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.
LCS: A blank matrix sample 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 (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B289281

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

==========

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, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

Page 1 of 1

C of C # 69730

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.
Ph: 416 441 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX, hexane	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)	Insufficient number of jars due to limited sample recovery Proceed with analysis as is
1	BH11	X				8	12/06/13	14:00	X		X	X	X					X											
2	~~BH-13~~	~~X~~				~~8~~	~~12/06/13~~																						
3	BH-13	X				8	12/06/13	15:00	X		X	X	X					X											
4	BH7	X				8	12/06/13	16:45	X		X	X	X					X											
5	BH5	X				5	12/06/13	16:00			X	X	X																X
6																													
7																													
8																													
9																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO 1/C/C ☐ ODWS med/fine grained
☐ Other

SPECIAL INSTRUCTIONS: Test samples as per TDG, Due to nature of samples headspace bubbles + sediment maybe present. Proceed with analysis as is. ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐

Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1 2 3: 1/1/0°C	PRESENT	✓		TEMP 1 2 3	PRESENT			TEMP 1 2 3	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. [signature] LAILA CHALATI	2012/06/14	17:00	1. Shruti SHRUTI PATEL	2012/06/15	13:08
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB # B289281

SAMPLES
LABELED BY: DKN
VERIFIED BY: J-L

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/06/13

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B289281*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*No*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2012/06/28*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69375

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B290448
Received: 2012/06/19, 07:40

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69375

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B290448
Received: 2012/06/19, 07:40

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

Encryption Key

Kudrat Cheema

26 Jun 2012 11:21:35 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B290448
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

LEAD (DISSOLVED) IN WATER

Maxxam ID		NV7647	NV7648		NV7649		
Sampling Date		2012/06/14 16:30	2012/06/15 10:30		2012/06/15 09:15		
COC Number		69375	69375		69375		
	Units	**BH6**	**BH12**	**QC Batch**	**BH8**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	0.67	1.3	2888537	<0.50	0.50	2889116

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290448
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV7647	NV7647		NV7648		NV7649		
Sampling Date		2012/06/14 16:30	2012/06/14 16:30		2012/06/15 10:30		2012/06/15 09:15		
COC Number		69375	69375		69375		69375		
	Units	**BH6**	**BH6 Lab-Dup**	**RDL**	**BH12**	**RDL**	**BH8**	**RDL**	**QC Batch**
Benzene	ug/L	210	200	2.0	680	1.0	46	0.40	2887548
Toluene	ug/L	41	40	2.0	490	1.0	3.7	0.40	2887548
Ethylbenzene	ug/L	1700	1700	2.0	500	1.0	610	0.40	2887548
o-Xylene	ug/L	790	780	2.0	91	1.0	6.0	0.40	2887548
p+m-Xylene	ug/L	3400	3400	4.0	360	2.0	28	0.80	2887548
Total Xylenes	ug/L	4200	4100	4.0	450	2.0	34	0.80	2887548
Hexane	ug/L	73	73	50	61	25	<10	10	2887548
F1 (C6-C10)	ug/L	14000	12000	250	4400	130	2000	50	2887548
F1 (C6-C10) - BTEX	ug/L	7600	6300	250	2300	130	1300	50	2887548
F2 (C10-C16 Hydrocarbons)	ug/L	2600		100	1400	100	820	100	2887710
F3 (C16-C34 Hydrocarbons)	ug/L	<100		100	<100	100	<100	100	2887710
F4 (C34-C50 Hydrocarbons)	ug/L	<100		100	<100	100	<100	100	2887710
Reached Baseline at C50	ug/L	Yes			Yes		Yes		2887710
Extraction Surrogate Recovery (%)									
o-Terphenyl	%	114			111		114		2887710
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	97	99		97		96		2887548
4-Bromofluorobenzene	%	102	102		101		101		2887548
D10-Ethylbenzene	%	87	86		92		87		2887548
D4-1,2-Dichloroethane	%	96	96		96		93		2887548

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Job #: B290448
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV7649		
Sampling Date		2012/06/15 09:15		
COC Number		69375		
	Units	**BH8 Lab-Dup**	**RDL**	**QC Batch**
F2 (C10-C16 Hydrocarbons)	ug/L	740	100	2887710
F3 (C16-C34 Hydrocarbons)	ug/L	<100	100	2887710
F4 (C34-C50 Hydrocarbons)	ug/L	<100	100	2887710
Reached Baseline at C50	ug/L	Yes		2887710
Extraction Surrogate Recovery (%)				
o-Terphenyl	%	112		2887710

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290448
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NV7647 **Collected** 2012/06/14
Sample ID BH6 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887548	N/A	2012/06/24	ABDIKARIM ALI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2888537	N/A	2012/06/22	HUA REN

Maxxam ID NV7647 Dup **Collected** 2012/06/14
Sample ID BH6 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887548	N/A	2012/06/24	ABDIKARIM ALI

Maxxam ID NV7648 **Collected** 2012/06/15
Sample ID BH12 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887548	N/A	2012/06/24	ABDIKARIM ALI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2888537	N/A	2012/06/22	HUA REN

Maxxam ID NV7649 **Collected** 2012/06/15
Sample ID BH8 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2887548	N/A	2012/06/25	ABDIKARIM ALI
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2889116	N/A	2012/06/25	AREFA DABHAD

Maxxam ID NV7649 Dup **Collected** 2012/06/15
Sample ID BH8 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290448
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample NV7649-01: F1-BTEX Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B290448

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887548	AAI	Method Blank	1,4-Difluorobenzene	2012/06/22		100	%	70 - 130
			4-Bromofluorobenzene	2012/06/22		98	%	70 - 130
			D10-Ethylbenzene	2012/06/22		95	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/22		98	%	70 - 130
			Benzene	2012/06/22	<0.20		ug/L	
			Toluene	2012/06/22	<0.20		ug/L	
			Ethylbenzene	2012/06/22	<0.20		ug/L	
			o-Xylene	2012/06/22	<0.20		ug/L	
			p+m-Xylene	2012/06/22	<0.40		ug/L	
			Total Xylenes	2012/06/22	<0.40		ug/L	
			Hexane	2012/06/22	<5.0		ug/L	
			F1 (C6-C10)	2012/06/22	<25		ug/L	
			F1 (C6-C10) - BTEX	2012/06/22	<25		ug/L	
2887710	NCI	Method Blank	o-Terphenyl	2012/06/21		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2012/06/21	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2012/06/21	<100		ug/L	
2888537	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/22	<0.50		ug/L	
2889116	ADA	Method Blank	Dissolved Lead (Pb)	2012/06/25	<0.50		ug/L	
2887548	AAI	RPD [NV7647-04]	Benzene	2012/06/24	1.3		%	30
			Toluene	2012/06/24	2.2		%	30
			Ethylbenzene	2012/06/24	0.5		%	30
			o-Xylene	2012/06/24	1.4		%	30
			p+m-Xylene	2012/06/24	0.003		%	30
			Total Xylenes	2012/06/24	0.3		%	30
			Hexane	2012/06/24	NC		%	30
			F1 (C6-C10)	2012/06/24	10.5		%	30
			F1 (C6-C10) - BTEX	2012/06/24	19.6		%	30
2887710	NCI	RPD [NV7649-02]	F2 (C10-C16 Hydrocarbons)	2012/06/22	10.5		%	30
			F3 (C16-C34 Hydrocarbons)	2012/06/22	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2012/06/22	NC		%	30
2887548	AAI	Matrix Spike [NV7647-04]	1,4-Difluorobenzene	2012/06/22		102	%	70 - 130
			4-Bromofluorobenzene	2012/06/22		101	%	70 - 130
			D10-Ethylbenzene	2012/06/22		101	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/22		96	%	70 - 130
			Benzene	2012/06/22		NC (1)	%	70 - 130
			Toluene	2012/06/22		110	%	70 - 130
			Ethylbenzene	2012/06/22		NC (1)	%	70 - 130
			o-Xylene	2012/06/22		NC (1)	%	70 - 130
			p+m-Xylene	2012/06/22		NC (1)	%	70 - 130
			Hexane	2012/06/22		104	%	70 - 130
			F1 (C6-C10)	2012/06/22		NC (1)	%	70 - 130
2887710	NCI	Matrix Spike [NV7648-02]	o-Terphenyl	2012/06/21		117	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21		NC (1)	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/21		108 (1)	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/21		98	%	50 - 130
2887548	AAI	LCS	1,4-Difluorobenzene	2012/06/22		103	%	70 - 130
			4-Bromofluorobenzene	2012/06/22		98	%	70 - 130
			D10-Ethylbenzene	2012/06/22		102	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/22		96	%	70 - 130
			Benzene	2012/06/22		116	%	70 - 130
			Toluene	2012/06/22		116	%	70 - 130
			Ethylbenzene	2012/06/22		122	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report (Continued)

Maxxam Job Number: B290448

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887548	AAI	LCS	o-Xylene	2012/06/22		119	%	70 - 130
			p+m-Xylene	2012/06/22		109	%	70 - 130
			Hexane	2012/06/22		122	%	70 - 130
			F1 (C6-C10)	2012/06/22		81	%	70 - 130
2887710	NCI	LCS	o-Terphenyl	2012/06/21		117	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21		109	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/21		109	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/21		99	%	70 - 130
2888537	HRE	LCS	Dissolved Lead (Pb)	2012/06/22		94	%	80 - 120
2889116	ADA	LCS	Dissolved Lead (Pb)	2012/06/25		100	%	80 - 120

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.
LCS: A blank matrix sample 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 (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

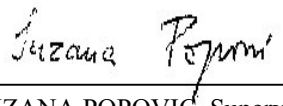
Validation Signature Page

Maxxam Job #: B290448

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

BRAD NEWMAN, Scientific Specialist

MAMDOUH SALIB, Analyst, Hydrocarbons



SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com
Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

C of C # 69375

INVOICE INFORMATION	REPORT INFORMATION
Company Name: [X] Imperial Oil [ ] ExxonMobil	Company Name: ecomor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r. lorne.wedg@esso.com	Email: nancy-hazell@ecomor-associates.com
Ph: 416 441 7866	Ph: 613 742 1781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01 003

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	SAMPLING: TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX hexane	F1	F2-F4	OIL & GREASE - TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	BH6	X				8	12/06/14	16:30	X		X	X	X					X										
2	BH12	X				8	12/06/15	10:30	X		X	X	X					X										
3	BH8	X				8	12/06/15	9:15	X		X	X	X					X										
4																													
5																													
6																													
7																													
8																													
9																													

IOL SITE LOCATION: 1545 Woodroffe Ave., Ottawa
IOL SITE # (if applicable): 88001626
IOL PROJECT # (if applicable): P11995
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 1107092F

REGULATORY CRITERIA / DETECTION LIMITS:
[X] Reg 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC (please indicate which Reg. version and if RSC required)
[ ] PWQO [ ] ODWS c/c used fine grained
[ ] Other

SPECIAL INSTRUCTIONS: Test samples as per TPG. Due to the nature of the samples headspace bubbles and sediment may be present Proceed with analysis as is. ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) [X]
Rush (3 days) [ ]
(2 days) [ ]
(1 day) [ ]
(same day) [ ]
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 1/1/1°C (1 2 3)	PRESENT	✓		TEMP (1 2 3)	PRESENT			TEMP (1 2 3)	PRESENT		
	INTACT	✓			INTACT				INTACT		

LAB USE ONLY
MAXXAM JOB # B290448
SAMPLES LABELED BY: RSO VERIFIED BY: SEL

	RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1.	LAILA CHALATI	2012/06/15	17:00	ASAD BHATTI	2012/06/19	07:40
2.						
3.						

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/06/14 and 2012/06/15

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B290448*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2012/06/28*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69376

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B290455
Received: 2012/06/19, 07:40

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Method Primary reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME Hydrocarbons
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003
Your C.O.C. #: 69376

Attention: Nancy Hazell
O'Connor Associates Environmental Inc
5420 Canotek Rd
Suite 104
Ottawa, ON
CANADA K1J 1E9

Report Date: 2012/06/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B290455
Received: 2012/06/19, 07:40

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

Encryption Key

Kudrat Cheema

26 Jun 2012 11:27:17 -04:00

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

KUDRAT CHEEMA, Project Manager
Email: KCheema@maxxam.ca
Phone# (905) 817-5700

==========

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

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

LEAD (DISSOLVED) IN WATER

Maxxam ID		NV7680	NV7681		
Sampling Date		2012/06/15 12:00	2012/06/15 12:15		
COC Number		69376	69376		
	Units	**FIELD BLANK-2**	**TRIP BLANK-1**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	2888537

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

O'REG 153 PHCS IN WATER (WATER)

Maxxam ID		NV7680	NV7681		
Sampling Date		2012/06/15 12:00	2012/06/15 12:15		
COC Number		69376	69376		
	Units	**FIELD BLANK-2**	**TRIP BLANK-1**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	2888405
Toluene	ug/L	<0.20	<0.20	0.20	2888405
Ethylbenzene	ug/L	<0.20	<0.20	0.20	2888405
o-Xylene	ug/L	<0.20	<0.20	0.20	2888405
p+m-Xylene	ug/L	<0.40	<0.40	0.40	2888405
Total Xylenes	ug/L	<0.40	<0.40	0.40	2888405
Hexane	ug/L	<5.0	<5.0	5.0	2888405
F1 (C6-C10)	ug/L	<25	<25	25	2888405
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	2888405
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	2887710
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100	100	2887710
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100	100	2887710
Reached Baseline at C50	ug/L	Yes	Yes		2887710
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	116	115		2887710
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	102	102		2888405
4-Bromofluorobenzene	%	114	112		2888405
D10-Ethylbenzene	%	89	91		2888405
D4-1,2-Dichloroethane	%	109	108		2888405

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Test Summary

Maxxam ID NV7680 **Collected** 2012/06/15
Sample ID FIELD BLANK-2 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2888405	N/A	2012/06/22	LINCOLN RAMDAHIN
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2888537	N/A	2012/06/22	HUA REN

Maxxam ID NV7681 **Collected** 2012/06/15
Sample ID TRIP BLANK-1 **Shipped** 2012/06/15
Matrix Water **Received** 2012/06/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	2888405	N/A	2012/06/22	LINCOLN RAMDAHIN
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	2887710	2012/06/21	2012/06/22	NICOLETA CIUBLEA
Dissolved Metals by ICPMS	ICP/MS	2888537	N/A	2012/06/22	HUA REN

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B290455
Report Date: 2012/06/26

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Package 1	3.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

O'Connor Associates Environmental Inc
Task Order#: 11070927
Site#: P11995
Site Location: 88001626; 1545 WOODROFFE AVE., OTTAWA
Project #: 471491.01003

Quality Assurance Report

Maxxam Job Number: B290455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2887710	NCI	Method Blank	o-Terphenyl	2012/06/21		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2012/06/21	<100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2012/06/21	<100		ug/L	
2888405	LRA	Method Blank	1,4-Difluorobenzene	2012/06/22		102	%	70 - 130
			4-Bromofluorobenzene	2012/06/22		110	%	70 - 130
			D10-Ethylbenzene	2012/06/22		96	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/22		106	%	70 - 130
			Benzene	2012/06/22	<0.20		ug/L	
			Toluene	2012/06/22	<0.20		ug/L	
			Ethylbenzene	2012/06/22	<0.20		ug/L	
			o-Xylene	2012/06/22	<0.20		ug/L	
			p+m-Xylene	2012/06/22	<0.40		ug/L	
			Total Xylenes	2012/06/22	<0.40		ug/L	
			Hexane	2012/06/22	<5.0		ug/L	
			F1 (C6-C10)	2012/06/22	<25		ug/L	
			F1 (C6-C10) - BTEX	2012/06/22	<25		ug/L	
2888537	HRE	Method Blank	Dissolved Lead (Pb)	2012/06/22	<0.50		ug/L	
2887710	NCI	LCS	o-Terphenyl	2012/06/21		117	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2012/06/21		109	%	70 - 130
			F3 (C16-C34 Hydrocarbons)	2012/06/21		109	%	70 - 130
			F4 (C34-C50 Hydrocarbons)	2012/06/21		99	%	70 - 130
2888405	LRA	LCS	1,4-Difluorobenzene	2012/06/23		101	%	70 - 130
			4-Bromofluorobenzene	2012/06/23		112	%	70 - 130
			D10-Ethylbenzene	2012/06/23		108	%	70 - 130
			D4-1,2-Dichloroethane	2012/06/23		113	%	70 - 130
			Benzene	2012/06/23		111	%	70 - 130
			Toluene	2012/06/23		99	%	70 - 130
			Ethylbenzene	2012/06/23		103	%	70 - 130
			o-Xylene	2012/06/23		99	%	70 - 130
			p+m-Xylene	2012/06/23		93	%	70 - 130
			Hexane	2012/06/23		98	%	70 - 130
			F1 (C6-C10)	2012/06/23		93	%	70 - 130
2888537	HRE	LCS	Dissolved Lead (Pb)	2012/06/22		94	%	80 - 120

LCS: A blank matrix sample 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B290455

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

BRAD NEWMAN, Scientific Specialist

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, ON L5N 2L8
www.maxxamanalytics.com

Phone: (905) 817-5700
Fax: (905) 817-5779
Toll Free: 1-800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUESTED

Page 1 of 1

C of C # 69376

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: oconnor associates
Contact Name: Lorne Wedge	Contact Name: Nancy Hazell
Address: 90 Wynford Drive, Toronto Ontario, M3C1K5	Address: 5420 Canotek Road, Ottawa Ontario Suite 104, K1J1E9
Email: r.lorne.wedge@esso.ca	Email: nancy-hazell@oconnor-associates.com
Ph: 416441 7866	Ph: 6137421781
Sampler Name (Print): LAILA CHALATI	Consultant Project #: 471491.01003

	FIELD SAMPLE ID	MATRIX: ~~GROUND~~ WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YY/MM/DD)	TIME	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX (hexane)	F1	F2-F4	OIL & GREASE – TOTAL / MINERAL (SPECIFY)	VOC	PCB	PAH	LEAD (dissolved)	ICP METALS	ICPMS METALS (REG 153)	MERCURY	SAR / CRVI (SPECIFY)	BORON HOT WATER SOLUBLE	IGNITABILITY	REG 558 - INORGANICS	REG 558 - PCB LEACHATE	REG 558 - BENZENE / VOLATILES (SPECIFY)	REG 558 - B(a)P / SEMI-VOLATILES (SPECIFY)
1	FIELD BLANK-2	X				8	12/06/15	12:00	X		X	X	X					X										
2	TRIP BLANK-1	X				5	12/06/15	12:15			X	X	X					X										
3																												
4																												
5																												
6																												
7																												
8																												
9																												

IOL SITE LOCATION: 1545 Woodroffe Ave, Ottawa.

IOL SITE # (if applicable): 88001626

IOL PROJECT # (if applicable): P11995

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 11070927

REGULATORY CRITERIA / DETECTION LIMITS:
☒ Reg 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(please indicate which Reg. version and if RSC required)
☐ PWQO 1/c/c ~~to~~ med/fine grained ☐ ODWS
☐ Other _____

SPECIAL INSTRUCTIONS: Test samples as per TDG. Due to the nature of the samples headspace bubbles may be present proceed with analysis as is. ICE-YES

JARS USED AND NOT SUBMITTED: 0

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO
TEMP 3/3/4°C (1 2 3)	PRESENT	✓		TEMP (1 2 3)	PRESENT			TEMP (1 2 3)	PRESENT		
	INTACT	✓			INTACT				INTACT		

RELINQUISHED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME	RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME
1. [signature] LAILA CHALATI	2012/06/15	17:00	1. [signature] ASAD BHAIDU	2012/06/19	07:40
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB # 8290455
SAMPLES
LABELED BY: RSO
VERIFIED BY: SEL

COC -1012 (01/10) IOL - ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *O'Connor Associates Environmental Inc.* Sampling Date: 2012/06/15

Location: *1545 Woodroffe Ave., Ottawa* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *471491.01003* Laboratory Job Number: *B290455*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC samples met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Beverley Noel* Data Reviewed by (Signature):

Review Date: *2012/06/28*

Revision Date (if applicable): Revised by (Signature):

APPENDIX D

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

A summary of the lab and field QA/QC issues identified in this report are summarized in Table D-1.

The soil field QA/QC program consisted of one field blank methanol sample for analysis of BTEX, PHC fraction F1 and hexane.

The groundwater field QA/QC program consisted of one field duplicate, one field blank, and one trip blank for the analysis of BTEX, PHC fraction F1 and hexane.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

The designated field duplicate RPD alert limits are presented in Table D-3. Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit. As indicated, all of the RPDs were within acceptable limits.

The soil field blank data were compared to the alert limits and are presented in Table D-2. As indicated, all of the results were within the alert limits.

The water trip blank and field blank data were compared to the alert limits and are presented in Table D-4. As indicated, all of the results were within the alert limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for soil and/or groundwater samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. As indicated, no laboratory QA/QC issues were identified with the exceptions presented in Table D-1.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE D-1

FIELD AND LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL ISSUES

Maxxam Job #	Lab Sample ID	DQW Number	Sample Name	Matrix	Test Affected	Deviation	Interpretation
B289234	NV1404 NV1405 NV1406	N/A	BH-16 DUP-3 BH-10	Water	Metals	Trend rule failure for lead with 4 out of 5 consecutive points greater than 1 standard deviation above the mean.	There is a potential slight high bias; however the sample analytical results were significantly below the site condition standards (non-detect). The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.
	NV1404 NV1405 NV1406	N/A	BH-16 DUP-3 BH-10	Water	Metals	Trend rule failure for beryllium with 7 consecutive points rising.	There is no potential bias; however, the sample analytical results were significantly below the site condition standards (non-detect). The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.
B289281	NV1656 NV1657 NV1658	N/A	BH11 BH-13 BH7	Water	Metals	Trend rule failure for lead with 4 out of 5 consecutive points greater than 1 standard deviation above the mean.	There is a potential slight high bias; however the sample analytical results were significantly below the site condition standards. The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.
	NV1656 NV1657 NV1658	N/A	BH11 BH-13 BH7	Water	Metals	Trend rule failure for beryllium with 7 consecutive points rising.	There is no potential bias; however, the sample analytical results were significantly below the site condition standards. The test method being out of statistical control should not materially affect the interpretation of the results for this analytical batch.

N/A – Not applicable

TABLE D-2

SOIL FIELD BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND HEXANE

SAMPLE LOCATIONS	RDL	FIELD BLANK-1	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Certificate of Analysis No.		B280942	
Maxxam Sample ID		NR1915	
Date Sampled (yyyy/mm/dd)		2012/05/31	
PARAMETERS			
Benzene	0.020	<0.020	No
Toluene	0.020	<0.020	No
Ethylbenzene	0.020	<0.020	No
Total Xylenes	0.040	<0.040	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	10	<10	No
Hexane	0.50	<0.50	No

a - BTEX have been subtracted from the fraction.
RDL - Reportable detection limit
"-" - Not analyzed
Results for all parameters are reported in micrograms per gram (µg/g) on a dry weight basis
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds alert limit
Note - Alert limits for field blanks are 1x RDL for BTEX, hexane and petroleum hydrocarbon fraction F1.

TABLE D-3

FIELD RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	BH-16	RDL	DUP-3 FIELD DUPLICATE BH-16	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B289234		B289234			
Maxxam Sample ID	NV1404		NV1405			
Date Sampled (yyyy/mm/dd)	2012/06/13		2012/06/13			
PARAMETERS						
Benzene	<0.20	0.20	<0.20	0.20	NC	80
Toluene	<0.20	0.20	<0.20	0.20	NC	80
Ethylbenzene	<0.20	0.20	<0.20	0.20	NC	80
Total Xylenes	<0.40	0.40	<0.40	0.40	NC	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	<25	25	<25	25	NC	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	100	<100	100	NC	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<100	100	<100	100	NC	80
Petroleum Hydrocarbons F4 (>C34 - C50)	<100	100	<100	100	NC	80
Hexane	<5.0	5.0	<5.0	5.0	NC	80
Lead	<0.50	0.50	<0.50	0.50	NC	50

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction.
c - Naphthalene has not been subtracted from the fraction.
d - PAHs have not been subtracted from the fraction.
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds RPD alert limit

TABLE D-4

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS, HEXANE AND LEAD

SAMPLE LOCATIONS	RDL	FIELD BLANK-2		TRIP BLANK-1	
Maxxam Certificate of Analysis No.		B290455	EXCEEDS ALERT LIMIT (yes/no)	B290455	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		NV7680		NV7681	
Date Sampled (yyyy/mm/dd)		2012/06/15		2012/06/15	
PARAMETERS					
Benzene	0.20	<0.20	No	<0.20	No
Toluene	0.20	<0.20	No	<0.20	No
Ethylbenzene	0.20	<0.20	No	<0.20	No
Total Xylenes	0.40	<0.40	No	<0.40	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	25	<25	No	<25	No
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	No	<100	No
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	100	<100	No	<100	No
Petroleum Hydrocarbons F4 (>C34 - C50)	100	<100	No	<100	No
Hexane	5.0	<5.0	No	<5.0	No
Lead	0.50	<0.50	No	<0.50	No

a - BTEX have been subtracted from the fraction.
b - Naphthalene has not been subtracted from the fraction.
c - PAHs have not been subtracted from the fraction.
RDL - Reportable detection limit
"-" - Not analyzed
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed is presented in the laboratory Certificates of Analysis.
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX, hexane and lead; 2x RDL for petroleum hydrocarbons fractions F1 to F4.

PARSONS

3715 Laird Road, Suite 100 • Mississauga, ON L5L 0A3 • (905) 820-1210 • Fax (905) 820-1221 • www.parsons.com

August 5, 2015 Ref. No.: 10-8518T03

Imperial Environmental Services
1 Duncan Mill Road
North York, Ontario
M3B 1Z2

These documents and the information contained therein are confidential, property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial and territorial freedom of information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch. II "1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch. I "1", as such legislation may be amended from time to time.

Title: 2015 Groundwater Monitoring and Sampling Data Package
Site Address: 1545 Woodroffe Avenue, Ottawa, Ontario
SAP Site Location Number: 88001626
Stripes Applicant Number: 302287
Facility Type: ESSO Retail Fuel Outlet
Limitation of Liability, Scope of Report and Third Party Reliance: Appendix A

Sampling Event: June 2015

Scope of Work

- Monitor selected monitoring wells (specifically, BH5, BH7, BH8, BH-10, BH11, BH12, and BH-13 to BH-16) for subsurface vapour concentrations, water levels, and the presence or absence of light non-aqueous phase liquid hydrocarbons (free product) during the sampling event.
- Collect groundwater samples from the selected accessible wells for laboratory analysis of benzene, toluene, ethylbenzene and xylenes (BTEX), petroleum hydrocarbon (PHC) fractions F1 to F4, and/or lead.
- Compare the groundwater analytical results to the applicable MOECC April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. Specifically, the Table 3 generic site condition standards for non-potable groundwater conditions, medium and fine textured soils, and all types of property use were selected. The previous groundwater analytical results, collected prior to July 1, 2011, were compared to the MOECC March 9, 2004 Table 3 (non-potable) site condition standards with the same conditions noted above.

Results

- Groundwater Monitoring (Date; Stratigraphic Unit; Depth to Groundwater Range; Groundwater Direction)
  - June 10, 2015; shallow overburden; 3.62 mbgs to 5.42 mbgs; northwest and southeast (Drawing No. 1 and Table 1)

- Monitoring Well Headspace Vapour (Date; Range)
  - June 10, 2015; <5 ppmv to >100 %LEL (Table 1)

- Free Product Occurrence (Date; Observations)
  - June 10, 2015; no free product encountered (Table 1 and Drawing No. 1)

- Groundwater Analytical Exceedances (Date; Wells)
  - June 10, 2015; BH11 and BH-13 (Table 2 and Drawing No. 2)
  - June 16, 2015; BH5, BH8, BH-10 and BH12 (Table 2 and Drawing No. 2)

Methodology

Subsurface Vapour Concentrations

Immediately after removing the well caps, the maximum subsurface vapour concentrations in the wells were measured using a RKI Eagle combustible gas detector that was operated in methane elimination mode. The collection tube of the combustible gas detector was inserted into the riser pipes and the peak instrument reading recorded.

Combustible Gas Detector Calibrations

The RKI Eagle calibration was checked daily in the field, by checking the instrument response against a nominal 43 %LEL concentration standard of n-hexane, delivered at the operational flow rate of the instrument. If the instrument reading was within ±10% of the gas standard value, then the instrument was deemed to be calibrated. However, if the reading was greater than ±10% of the gas standard value, then the instrument calibration was adjusted in the field until the instrument read within ±10% of the gas standard.

Depth to Groundwater and Free Product Thickness

The depth to the water table and presence or absence of free product in the wells were determined with a Heron H.OIL interface probe that was cleaned with soapy water, then rinsed with distilled water, between monitoring wells.

Low-Flow Sampling Methodology

All samples were collected using low-flow sampling. A variable-flow peristaltic pump was used to remove groundwater from the mid-point of the monitoring well screened zone. The pump was connected to a flow-through cell equipped with a multimeter (Horiba U-22) probe that measured pH, temperature, electrical conductivity, dissolved oxygen (DO), reduction oxidation potential (REDOX), and turbidity. During low-flow purging, the water level in each well was continually monitored and the purging rate was adjusted such that the overall drawdown from the static groundwater level did not exceed approximately 10 cm. The purging rates ranged from approximately 100 mL/min to 120 mL/min. The groundwater sample was collected when the pH (± 0.1 pH Units), temperature (± 3%), electrical conductivity (± 3%), DO (± 10%), REDOX (± 10 mV), and turbidity (± 10%) measurements stabilized, over three consecutive readings, taken at a minimum rate of at least one per every flow-through cell volume.

The pump and flow-through cell were connected to the wells with polyethylene and silicone tubing that were individually dedicated to each monitoring well. The groundwater samples were collected using the dedicated tubing.

Laboratory Analysis of Samples

Samples were collected in the appropriate sample containers, using the appropriate preservatives. All sample bottles were supplied by the laboratory. The groundwater samples were placed in coolers with ice immediately after they were collected. The samples were submitted to the Maxxam Analytics Inc. laboratory in Mississauga, Ontario. Maxxam's Mississauga facility is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA). Analytical methods used are referenced in the certificates of analysis presented in Appendix B.

Quality Assurance and Quality Control Results

The laboratory and field QA/QC discussions are presented in Appendix C. In summary, no QA/QC issues were identified that would materially affect the overall conclusions of the groundwater monitoring and sampling assessment presented in this report.

Closure

We trust the foregoing information is satisfactory for your requirements.

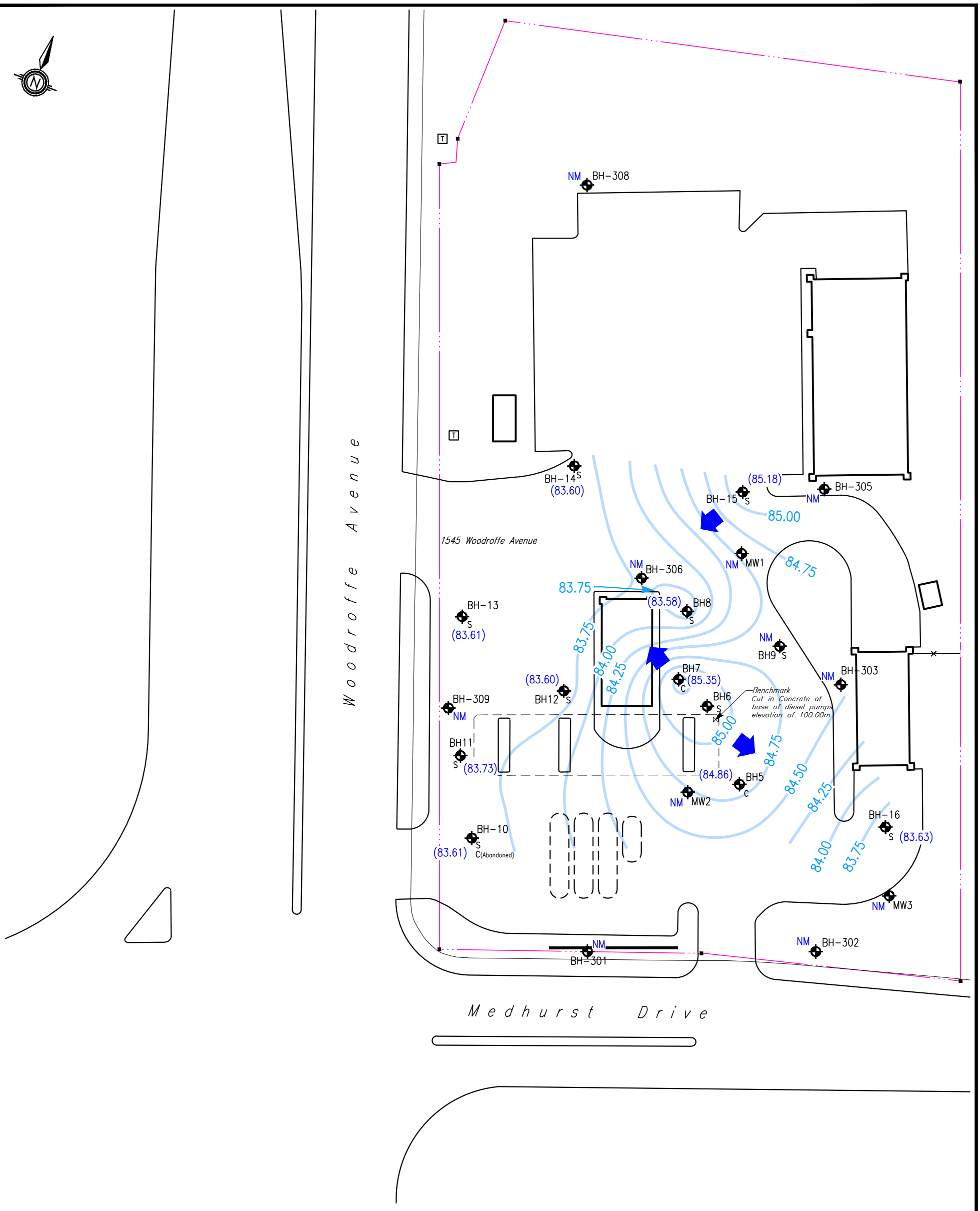
PARSONS CANADA LTD.

Lisa Pensato, P.Eng. John Halstead, M.Sc., P.Geo.

LP:elh

Distribution: (1) Imperial Environmental Services

W:\8000-999\8518#00\8518.3\851800315.L02(P2)lf.docx



LEGEND

- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- Inferred Direction of Groundwater Flow
- 49.00 — Potentiometric Surface Contour with Elevation, metres
- (49.00) — Potentiometric Surface Elevation, metres
- (49.00)* — Value Not Used for Contouring
- NM — Well Not Monitored

NOTE: Contouring based on Surfer® linear kriging computer modelling.

NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Scale 1:500

Elevation of the Groundwater Potentiometric Surface
2015/06/10

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: TFY	Page Size: 11 x 17 in	Ref. No.: 10-8518T03
Reviewed: LFP	File No.: 8518M175	Date: 2015/08/05
PARSONS		Drawing No.: 1

SSM: 8518 2015-06

Ref.: S-34-P

BH9 — Screen Interval: 5.8 - 7.3 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	<0.2	0.9	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	0.4	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/11/17	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5

BH-15 — Screen Interval: 3.0 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2013/10/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50
2014/06/18	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50
2015/06/16	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50

BH8 — Screen Interval: 4.5 - 6.0 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	140	10	610	160	910	460	<100	110	-	<0.5
2010/06/03	230	48	1200	1100	1400	550	<100	<100	-	<0.5
2010/07/23	260	15	820	390	2300	1400	<100	<100	-	<0.5
2010/11/17	130	17	780	370	2400	660	<100	<100	-	<0.5
2011/06/27	57	5.7	400	37	960	480	<100	<100	-	<0.5
2011/10/31	16	4.5	140	8.1	490	**230**	<100	<100	-	<0.5
2011/10/31 (DUP-2)	17	4.8	150	9.2	600	**240**	<100	<100	-	<0.5
2012/06/15	46	3.7	610	34	**1300**	**820**	<100	<100	<10	<0.50
2014/06/17	48	5.5	400	180	**860**	**520**	<200	<200	-	<0.50
2015/06/16	20	2.2	210	68	160	**480**	<200	<200	-	<0.50

BH-14 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	3.7	0.31	75	<0.40	110	<100	<100	<100	-	<0.5
2014/06/18	12	<0.20	19	<0.40	<25	<100	<200	<200	-	<2.5
2015/06/10	7.3	<0.20	45	<0.40	74	<100	<200	<200	-	<0.5

BH7 — Screen Interval: 2.0 - 4.7 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2008/12/11 (low flow)	<0.2	1.3	0.8	5.2	<100	<100	<100	<100	-	1.0
2010/03/16	<0.2	<0.2	<0.2	0.6	<100	<100	<100	<100	-	<0.5
2010/06/03	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/07/23	<0.2	<0.2	<0.2	<0.4	<100	<100	<100	<100	-	<0.5
2010/11/17	<0.2	<0.2	0.2	0.6	<100	<100	200	140	-	<0.5
2011/06/27	<0.2	<0.2	<0.2	<0.4	<100	<100	330	<100	-	<0.5
2011/10/31	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	-	<0.5
2012/06/13	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	0.77
2013/10/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50
2014/06/17	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50
2015/06/16	<0.20	<0.20	<0.20	<0.40	<25	<100	<200	<200	-	<0.50

BH-13 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	4.1	52	340	730	**930**	**270**	<100	<100	-	<0.5
2012/06/13	9.3	69	750	1100	**2600**	**540**	<100	<100	17	0.57
2013/10/17	34	7.6	260	240	**780**	**330**	<200	<200	-	<0.50
2014/06/18	36	55	1000	1100	**2100**	**1000**	<200	<200	-	<0.50
2015/06/10	17	29	720	780	**1800**	**960**	<200	<200	-	<0.50

BH6 — Screen Interval: 2.0 - 4.7 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2008/12/11 (low flow)	Sheen									
2010/03/16	450	47	1500	3500	5600	650	2100	730	-	<0.5
2010/06/03	330	140	1900	5100	8700	2800	420	270	-	<0.5
2010/07/23	29	12	82	280	250	3000	280	180	-	<0.5
2010/11/17	38	30	880	2500	4900	2400	780	430	-	<0.5
2011/06/27	260	71	1500	3600	6700	2500	450	180	-	<0.5
2011/06/27 (DUP-101)	250	66	1300	3400	6000	2600	330	120	-	<0.5
2011/10/31	**440**	74	**2500**	**5200**	**7800**	**2300**	<100	<100	-	<0.5
2012/06/14	210	41	1700	4200	**7600**	**2600**	<100	<100	73	0.67

BH12 — Screen Interval: 3.0 - 6.0 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	1500	230	670	290	2700	1000	<100	<100	-	<0.5
2010/03/16 (QA1)	1400	220	630	270	2800	1100	<100	<100	-	<0.5
2010/06/03	1800	3100	860	3100	9300	5000	1500	<100	-	0.8
2010/06/03 (DUP1)	1700	3000	820	3000	5500	8300	2400	<100	-	0.6
2010/07/23	2500	3400	1300	4100	8000	6700	2400	<100	-	<0.5
201007/23 (DUP1)	2500	3300	1200	4100	7800	5600	1400	<100	-	<0.5
2010/11/17	1600	2800	1100	3300	4000	7400	2600	<100	-	<0.5
2010/11/17 (DUP-1)	1400	2500	1100	3100	3200	5500	1600	<100	-	<0.5
2011/06/27	73									
2011/10/31	2									
2012/06/13	Sheen									
2012/06/15	**680**	490	500	450	**2300**	**1400**	<100	<100	61	1.3
2013/10/17	**1100**	1400	1500	**6000**	**8200**	**7600**	**1900**	<200	-	<0.50
2013/10/17 (DUP-1)	**1200**	1500	1600	**6100**	**7700**	**3100**	320	<200	-	0.53
2014/06/16	Sheen									
2014/06/18	**2800**	3000	860	2500	**3100**	**3200**	**710**	**620**	-	1.4
2014/06/18 (DUP-01)	**2900**	3100	910	2600	**4000**	**2900**	350	**600**	-	1.4
2015/06/16	**790**	860	1100	**5400**	**10000**	**5000**	**520**	<200	-	1.6

BH11 — Screen Interval: 3.1 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2010/03/16	0.7	14	20	200	850	460	<100	<100	-	<0.5
2010/06/03	2.0	9.8	23	140	600	110	<100	<100	-	<0.5
2010/07/23	3.0	11	31	210	450	140	<100	<100	-	<0.5
2010/11/17	9.1	2.8	44	43	360	210	<100	<100	-	<0.5
2011/06/27	96	710	540	2300	4700	1300	<100	<100	-	3.6
2011/10/31	7.9	10	27	180	610	**240**	<100	<100	-	<0.5
2012/06/13	64	4.2	87	47	290	120	<100	<100	<5.0	0.62
2013/10/16	110	370	820	3100	**5400**	**700**	<200	<200	-	<0.50
2014/06/16	110	270	570	2200	**4500**	**2400**	<200	<200	-	4.5
2015/06/10	11	100	470	2200	**3600**	**2200**	<200	<200	-	3.4
2015/06/10 Dup	10	98	440	2000	**4000**	**2100**	<200	<200	-	3.6

BH-16 — Screen Interval: 2.9 - 5.9 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2012/06/13	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50
2012/06/13 (DUP-3)	<0.20	<0.20	<0.20	<0.40	<25	<100	<100	<100	<5.0	<0.50
2014/06/18	<0.20	<0.20	<0.20	<0.40	390	<100	<200	<200	-	<0.50
2015/06/16	<0.20	<0.20	<0.20	<0.40	87	<100	<200	<200	-	<0.50

BH5 — Screen Interval: 1.8 - 4.6 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2008/12/11 (low flow)	41	61	2500	8500	9100	1200	<100	<100	-	<0.5
2010/03/16	<4	9	2800	9600	11 000	4900	240	<100	-	<0.5
2010/06/03	<10	<10	2200	6900	7600	4600	200	<100	-	<0.5
2010/07/23	17	<10	1400	3800	7400	5600	260	<100	-	<0.5
2010/11/17	25	<4	1400	3500	4800	3600	<100	<100	-	<0.5
2011/06/27	10	3	1900	5500	17 000	6500	200	<100	-	<0.5
2011/11/01	48	<2.0	1400	3100	**5000**	**2700**	<100	<100	-	-
2012/06/13	50	5.5	2000	4200	**9600**	**3100**	<100	<100	<50	-
2013/10/17	32	2.9	520	2300	**7000**	**480**	**670**	460	-	<0.50
2014/06/18	120	8.8	1500	**5000**	**9800**	**3700**	<200	<200	-	0.95
2015/06/16	100	7.7	1100	3800	**6200**	**5100**	<200	<200	-	<0.50

BH-10 — Screen Interval: 3.7 - 6.1 mbgs

Sample Date	B	T	E	X	F1	F2	F3	F4	Hx	Pb
2011/10/31	10	0.27	2.8	0.67	<25	<100	<100	<100	-	<0.5
2012/06/13	76	2.7	130	42	330	**200**	<100	<100	<5.0	<0.50
2013/10/16	98	25	700	560	**1400**	**970**	<200	<200	-	<0.50
2014/06/17	120	14	680	810	**4700**	**950**	<200	<200	-	<0.50
2015/06/16	52	190	1300	1800	**4800**	**1700**	<200	<200	-	<0.50

Analytical Results

All Results Reported in µg/L

Location Where Most Recent Groundwater Sample Met Standards for All Parameters that Were Analyzed, Shown in Green

Location Where Most Recent Groundwater Sample Exceeded Standards for At Least One Parameter that Was Analyzed, Shown in Red

Location Where No Groundwater Sample Was Submitted From the Most Recent Sampling Event, Shown in Black

Location Where Measurable Free Product or Sheen Was Observed From Most Recent Sampling Event, Shown in Purple

1234 — Exceedances of Standards, Shown in Red and Bold

1234, Sheen — Free Product Apparent Thickness (in millimetres), or Sheen, Shown in Purple and Bold

DUP — Field Duplicate Sample

– — Not Analyzed

< — Result Less Than Reportable Detection Limit

Standards

Parameter	B	T	E	X	F1	F2	F3	F4	Hx	Pb
Standard* µg/L	12 000	37 000	50 000	35 000	NS	NS	NS	NS	NS	32
Standard** µg/L	430	18 000	2300	4200	750	150	500	500	520	25

B-Benzene **T**-Toluene **E**-Ethylbenzene **X**-Total Xylenes **F1-F4**-CCME CWS Petroleum Hydrocarbon Fractions **Hx**-Hexane **Pb**-Lead

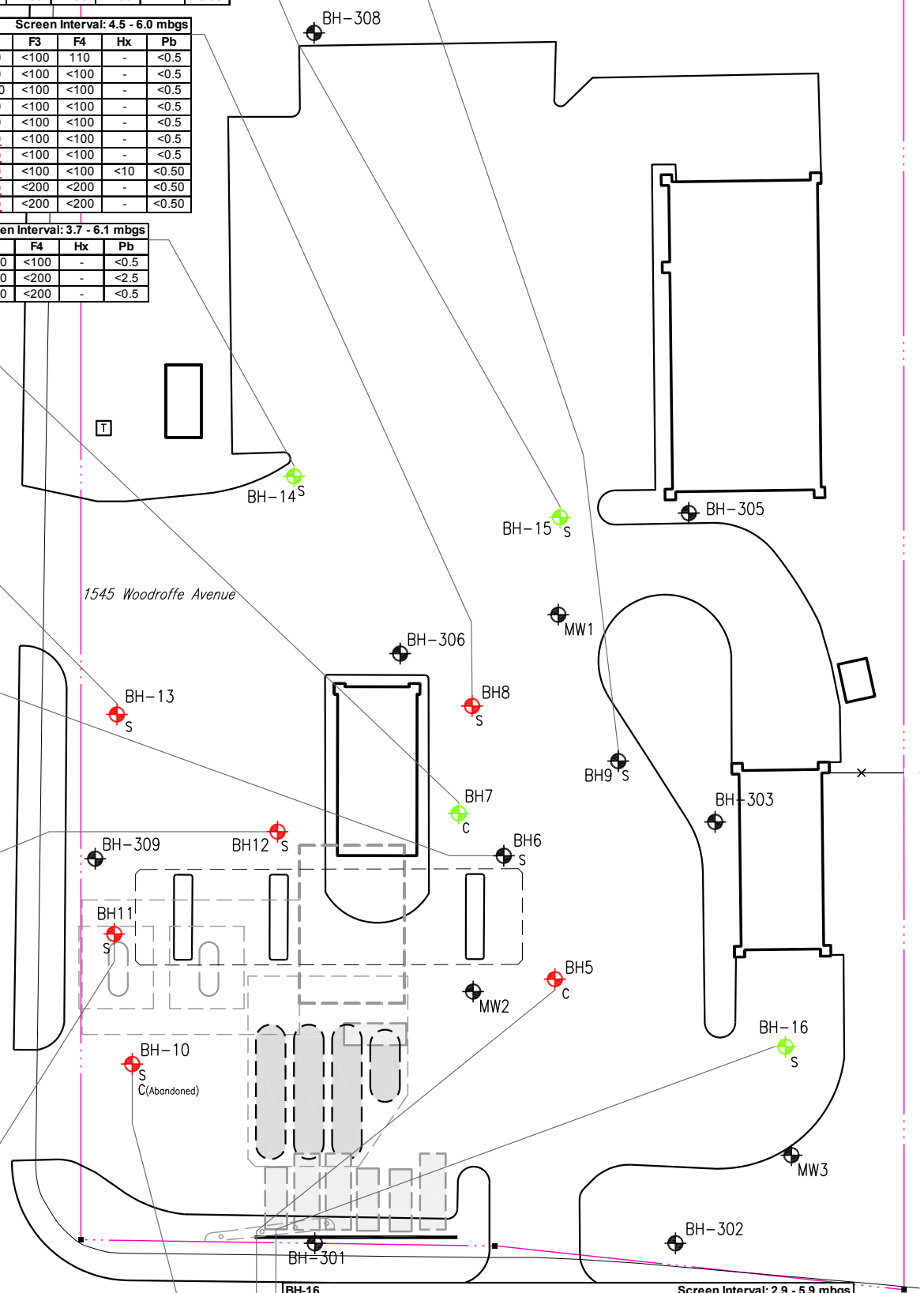
* **MOECC Table 3 (2004)** All types of property use, medium and fine textured soils.

** **MOECC Table 3 (2011)** All types of property use, medium and fine textured soils.

NS — No standard

LEGEND

- Former Feature
- Property Line, Surveyed 2006
- Property Boundary Pin
- Fence
- T — Transformer (Pad Mounted)
- Monitoring Well
- 2010/12/31 — Date Format: yyyy/mm/dd
- mbgs — Metres Below Ground Surface
- µg/L — Micrograms Per Litre



NOTE: All features are approximate.

REFERENCE: Clark Wilkinson Alton survey dated 2006/07/21.

0 5 10 15 20 25m

Scale 1:500

Groundwater Analytical Results
Petroleum Hydrocarbon Parameters, Hexane and Lead

Imperial Oil
1545 Woodroffe Avenue, Ottawa, Ontario

Drawn: TFY	Page Size: 11 x 17 in	Ref. No.: 10-8518T03
Reviewed: LFP	File No.: 8518G174	Date: 2015/08/05
PARSONS		Drawing No.: 2

SSM: 8518 2015-06

Ref.: S-34-P

TABLE 1
GROUNDWATER MONITORING RESULTS

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH1	88.51	88.61	1.8 - 4.3	2008/11/19	>100%	DRY	DRY	DRY
				2008/12/11	45%	DRY	DRY	DRY
				2009/05/12	AW	AW	AW	AW
BH2	88.33	88.51	1.5 - 4.3	2008/11/19	325	ND	4.25	84.26
				2008/12/11	175	ND	3.40	85.11
				2009/05/12	AW	AW	AW	AW
BH3	88.50	88.63	4.6 - 6.1	2008/11/19	70%	ND	4.98	83.65
				2008/12/11	>100%	ND	4.95	83.69
				2009/05/12	AW	AW	AW	AW
BH4	88.62	88.72	4.2 - 6.1	2008/11/19	170	ND	5.06	83.65
				2008/12/11	5%	ND	5.04	83.68
				2009/05/12	AW	AW	AW	AW
BH5	88.79	88.85	1.8 - 4.6	2008/11/19	20%	ND	4.37	84.48
				2008/12/11	20%	ND	4.13	84.72
				2009/05/12	95	ND	3.17	85.68
	88.79	88.92		2010/03/16	75	ND	3.32	85.60
				2010/06/03	5%	ND	3.93	84.99
				2010/07/23	10%	ND	4.11	84.81
				2010/11/17	5%	ND	4.06	84.86
				2011/06/27	5%	ND	3.34	85.58
				2011/10/31	8%	ND	4.32	84.60
				2012/06/13	23%	ND	4.18	84.75
				2013/10/17	120	ND	4.33	84.59
				2014/04/07	NM	NM	NM	NM
				2014/06/16	30%	ND	3.72	85.20
				2014/12/15	NM	NM	NM	NM
				2015/06/10	15%	ND	4.06	84.86
BH6	88.77	88.89	2.0 - 4.7	2008/11/19	25%	ND	5.25	83.63
				2008/12/11	>100%	Sheen	5.23	83.66
				2009/05/12	11%	ND	4.99	83.90
	88.82	88.95		2010/03/16	25%	ND	5.09	83.86
				2010/06/03	>100%	ND	5.11	83.84
				2010/07/23	5%	ND	5.21	83.74
				2010/11/17	>100%	ND	5.11	83.84
				2011/06/27	>100%	ND	4.93	84.02
				2011/10/31	5%	ND	5.28	83.67
				2012/06/13	40%	ND	5.33	83.62
				2013/10/17	NM	NM	NM	NM
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	ND	5.12	83.83
				2014/12/15	NM	NM	NM	NM
				2015/06/10	NM	NM	NM	NM

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH7	88.87	88.94	2.0 - 4.7	2008/11/19	150	ND	3.86	85.07
				2008/12/11	225	ND	3.67	85.26
				2009/05/12	160	ND	3.14	85.79
	88.85	88.97		2010/03/16	50	ND	3.31	85.67
				2010/06/03	75	ND	3.55	85.42
				2010/07/23	100	ND	3.70	85.27
				2010/11/17	150	ND	3.60	85.37
				2011/06/27	120	ND	3.34	85.64
				2011/10/31	180	ND	3.99	84.98
				2012/06/13	150	ND	3.79	85.18
				2013/10/17	75	ND	4.08	84.89
				2014/04/07	NM	NM	NM	NM
				2014/06/16	10	ND	3.50	85.47
				2014/12/15	NM	NM	NM	NM
				2015/06/10	<5	ND	3.62	85.35
BH8	88.88	89.00	4.5 - 6.0	2010/03/16	75	ND	5.14	83.86
				2010/06/03	75	ND	5.18	83.82
				2010/07/23	150	ND	5.28	83.72
				2010/11/17	150	ND	5.18	83.82
				2011/06/27	140	ND	5.00	84.00
				2011/10/31	175	ND	5.35	83.66
				2012/06/13	5%	ND	5.41	83.60
				2013/10/17	>100%	DRY	DRY	DRY
				2014/04/07	NM	NM	NM	NM
				2014/06/16	88%	ND	5.20	83.80
				2014/12/15	NM	NM	NM	NM
				2015/06/10	31%	ND	5.42	83.58
BH9	88.97	89.10	5.8 - 7.3	2010/03/16	25	ND	5.23	83.87 *
				2010/06/03	25	ND	5.27	83.83 *
				2010/07/23	25	ND	5.37	83.73 *
				2010/11/17	50	ND	5.27	83.83 *
				2011/06/27	<5	ND	5.09	84.01 *
				2011/10/31	60	ND	5.43	83.67 *
				2012/06/13	80	ND	5.49	83.61 *
				2013/10/17	NM	NM	NM	NM
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	ND	5.28	83.82 *
				2014/12/15	NM	NM	NM	NM
				2015/06/10	NM	NM	NM	NM
BH-10	88.47	88.56	1.5 - 4.1	2010/03/16	50	DRY	DRY	DRY
				2010/06/03	100	DRY	DRY	DRY
				2010/07/23	100	DRY	DRY	DRY
				2010/11/17	150	DRY	DRY	DRY
				2011/06/27	80	DRY	DRY	DRY
	88.46	88.56	3.7 - 6.1	2011/10/31	13%	ND	4.87	83.69
				2012/06/13	20%	ND	4.94	83.62
				2013/10/16	37%	ND	5.71	82.85
				2014/04/07	35%	NA	NA	NA
				2014/06/16	>100%	ND	4.72	83.84
				2014/12/15	NM	NM	NM	NM
				2015/06/10	21%	ND	4.95	83.61

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH11	88.43	88.57	3.1 - 6.1	2010/03/16	5%	ND	4.70	83.87
				2010/06/03	500	ND	4.72	83.85
				2010/07/23	15%	ND	4.82	83.75
				2010/11/17	15%	ND	4.73	83.84
				2011/06/27	325	ND	4.44	84.13
	88.53	88.57		2011/10/31	16%	ND	4.79	83.78
				2012/06/13	22%	ND	4.86	83.71
				2013/10/16	27%	ND	5.65	82.92
				2014/04/07	20%	ND	5.09	83.48
				2014/06/16	>100%	ND	4.64	83.93
				2014/12/15	NM	NM	NM	NM
				2015/06/10	>100%	ND	4.84	83.73
BH12	88.74	88.82	3.0 - 6.0	2010/03/16	>100%	ND	4.97	83.86
				2010/06/03	225	ND	4.99	83.83
				2010/07/23	>100%	ND	5.09	83.73
				2010/11/17	>100%	ND	5.00	83.82
				2011/06/27	>100%	73 (4)	4.80	84.02
				2011/10/31	240	2 (0)	5.15	83.67
				2012/06/13	100%	Sheen	5.22	83.60
				2013/10/17	>100%	ND	5.99	82.83
				2014/04/07	NM	NM	NM	NM
				2014/06/16	>100%	Sheen	5.01	83.81
				2014/12/15	NM	NM	NM	NM
				2015/06/10	>100%	ND	5.22	83.60
BH-13	88.42	88.49	3.7 - 6.1	2011/10/31	17%	ND	3.83	84.65
				2012/06/13	40%	ND	4.90	83.59
				2013/10/17	50%	ND	5.69	82.80
				2014/04/07	70%	NA	NA	NA
				2014/06/16	>100%	ND	4.68	83.81
				2014/12/15	NM	NM	NM	NM
				2015/06/10	>100%	ND	4.88	83.61
BH-14	88.77	88.85	3.7 - 6.1	2011/10/31	12%	ND	5.23	83.63
				2012/06/13	50%	ND	5.28	83.57 *
				2013/10/17	75%	ND	6.10	82.75 *
				2014/04/07	NM	NM	NM	NM
				2014/06/16	15%	ND	5.08	83.77 *
				2014/12/15	NM	NM	NM	NM
				2015/06/10	<5	ND	5.26	83.60 *
BH-15	88.83	88.94	3.0 - 6.1	2011/10/31	400	ND	5.29	83.66
				2012/06/13	215	ND	5.33	83.61 *
				2013/10/17	65	ND	5.79	83.15 *
				2014/04/07	NM	NM	NM	NM
				2014/06/16	120	ND	3.76	85.18 *
				2014/12/15	NM	NM	NM	NM
				2015/06/10	25	ND	3.76	85.18 *
BH-16	88.80	88.95	2.9 - 5.9	2012/06/13	<5	ND	5.34	83.61
				2013/10/17	25%	ND	6.10	82.85
				2014/04/07	NM	NM	NM	NM
				2014/06/16	53%	ND	5.11	83.85
				2014/12/15	NM	NM	NM	NM
				2015/06/10	73%	ND	5.32	83.63

ASSESSMENT LOCATION	TOP OF PIPE ELEVATION[1] (m)	GROUND SURFACE ELEVATION[1] (m)	SCREEN INTERVAL (mbgs)	DATE (yyyy/mm/dd)	SUBSURFACE VAPOUR CONCENTRATIONS[2]	FREE PRODUCT THICKNESSES (mm)	POTENTIOMETRIC DEPTH[3] (mbgs)	POTENTIOMETRIC ELEVATION[1, 3] (m)
BH-301	99.50	99.61	3.4 -6.4	2014/12/15 2015/06/10	200 NM	ND NM	4.95 NM	94.65 NM
BH-302	99.38	99.56	3.4 -6.4	2014/12/15 2015/06/10	220 NM	ND NM	4.91 NM	94.66 NM
BH-303	100.00	100.12	3.4 -6.4	2014/12/15 2015/06/10	125 NM	ND NM	3.58 NM	96.54 NM
BH-305	100.16	100.27	3.4 -6.4	2014/12/15 2015/06/10	<5 NM	ND NM	4.09 NM	96.18 NM
BH-306	99.81	99.92	3.4 -6.4	2014/12/15 2015/06/10	40 NM	ND NM	5.32 NM	94.60 NM
BH-308	99.93	100.05	3.0 -6.1	2014/12/15 2015/06/10	<5 NM	ND NM	4.08 NM	95.97 NM
BH-309	99.46	99.58	3.0 -6.1	2014/12/15 2015/06/10	140 NM	ND NM	4.96 NM	94.62 NM

1 - Relative to local benchmark (BH5 top of riser pipe) having an elevation of 88.79 m
BH-300 series - Relative to local benchmark (cut into concrete at base of the diesel pumps) having an elevation of 100.00 m
2 - ppmv if not indicated, or % LEL if indicated
3 - Calculated using product thicknesses corrected by a specific gravity of 0.75
AW - Abandoned well
m - metres
mbgs - metres below ground surface
mm - millimetres
ND - Not detected
( ) - After bailing/purging
* - Water level above top of screen

TABLE 2

GROUNDWATER ANALYTICAL RESULTS - JUNE 2015 SAMPLING EVENT
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH5	BH7	BH8	BH-10	BH11	DUP-01 FIELD DUPLICATE BH11	BH12	BH-13	BH-14	BH-15	TABLE 3 STANDARDS[a]
MAXXAM Certificate of Analysis No.	B5B7507V1	B5B8851V1	B5B7507V1	B5B7491V1	B5B1621V1	B5B1621V1	B5B7491V1	B5B1621V1	B5B1798V1	B5B7507V1	
MAXXAM Sample ID	ALW960	AMC862	ALW959	ALW901	AKU418	AKU419	ALW902	AKU417	AKV172	ALW958	
Date Sampled (yyyy/mm/dd)	2015/06/16	2015/06/16	2015/06/16	2015/06/16	2015/06/10	2015/06/10	2015/06/16	2015/06/10	2015/06/10	2015/06/16	
PARAMETERS											
Benzene	100	<0.20	20	52	11	10	**790**	17	7.3	<0.20	430
Toluene	7.7	<0.20	2.2	190	100	98	860	29	<0.20	<0.20	18 000
Ethylbenzene	1100	<0.20	210	1300	470	440	1100	720	45	<0.20	2300
Total Xylenes	3800	<0.40	68	1800	2200	2000	**5400**	780	<0.40	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	**6200**	<25	160	**4800**	**3600**	**4000**	**10 000**	**1800**	74	<25	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	**5100**	<100	**480**	**1700**	**2200**	**2100**	**5000**	**960**	<100	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	<200	<200	<200	<200	<200	**520**	<200	<200	<200	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	500
Lead	<0.50	<0.50	<0.50	<0.50	3.4	3.6	1.6	<0.50	<0.50	<0.50	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils

b - BTEX have been subtracted from the fraction

c - Naphthalene has not been subtracted from the fraction

d - PAHs have not been subtracted from the fraction

"-" - Not analyzed

* - Result from F4 gravimetric analysis

mbgs - metres below ground surface

BOLD - Exceeds applicable standard

Results for all parameters are reported in micrograms per litre (µg/L)

The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE 2

GROUNDWATER ANALYTICAL RESULTS - JUNE 2015 SAMPLING EVENT
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH-16	
MAXXAM Certificate of Analysis No.	B5B7491V1	TABLE 3 STANDARDS[a]
MAXXAM Sample ID	ALW900	
Date Sampled (yyyy/mm/dd)	2015/06/16	
PARAMETERS		
Benzene	<0.20	430
Toluene	<0.20	18 000
Ethylbenzene	<0.20	2300
Total Xylenes	<0.40	4200
Petroleum Hydrocarbons F1 (C6 - C10)[b]	87	750
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	<100	150
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	500
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	500
Lead	<0.50	25

a - Ontario Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011), non-potable, all types of property use, medium and fine textured soils
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
"-" - Not analyzed
* - Result from F4 gravimetric analysis
mbgs - metres below ground surface
BOLD - Exceeds applicable standard
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

APPENDIX A

LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by Parsons Canada Ltd. (Parsons), for Imperial. It is intended for the sole and exclusive use of Imperial, its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Imperial"). Any use, reliance on or decision made by any person other than Imperial based on this report is the sole responsibility of such other person. Imperial and Parsons, make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by Parsons, with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the Site, substances addressed by the investigation may exist in areas of the Site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Imperial, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Parsons. Nothing in this report is intended to constitute or provide a legal opinion.

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS

Task Order#: 4410272779
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 517667-03-01

Attention:Lisa Pensato

Parsons
1223 Michael Street
Suite 100
Ottawa, ON
Canada K1J7T2

Report Date: 2015/06/18
Report #: R3469587
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5B1621
Received: 2015/06/11, 10:50

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020A m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

Encryption Key

Kudrat Bajwa
18 Jun 2015 11:40:25 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B5B1621
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		AKU417	AKU418	AKU419		
Sampling Date		2015/06/10 14:15	2015/06/10 12:20	2015/06/10 12:20		
COC Number		517667-03-01	517667-03-01	517667-03-01		
	Units	**BH-13**	**BH11**	**DUP-01**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	3.4	3.6	0.50	4066400

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1621
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		AKU417	AKU417		AKU418	AKU419		
Sampling Date		2015/06/10 14:15	2015/06/10 14:15		2015/06/10 12:20	2015/06/10 12:20		
COC Number		517667-03-01	517667-03-01		517667-03-01	517667-03-01		
	Units	**BH-13**	**BH-13 Lab-Dup**	**RDL**	**BH11**	**DUP-01**	**RDL**	**QC Batch**
Benzene	ug/L	17	16	0.40	11	10	1.0	4064985
Toluene	ug/L	29	26	0.40	100	98	1.0	4064985
Ethylbenzene	ug/L	720	640	0.40	470	440	1.0	4064985
o-Xylene	ug/L	100	94	0.40	630	590	1.0	4064985
p+m-Xylene	ug/L	670	600	0.80	1600	1400	2.0	4064985
Total Xylenes	ug/L	780	700	0.80	2200	2000	2.0	4064985
F1 (C6-C10)	ug/L	3300	3500	50	6400	6600	130	4064985
F1 (C6-C10) - BTEX	ug/L	1800	2100	50	3600	4000	130	4064985
F2 (C10-C16 Hydrocarbons)	ug/L	960		100	2200	2100	100	4064896
F3 (C16-C34 Hydrocarbons)	ug/L	<200		200	<200	<200	200	4064896
F4 (C34-C50 Hydrocarbons)	ug/L	<200		200	<200	<200	200	4064896
Reached Baseline at C50	ug/L	Yes			Yes	Yes		4064896
Extraction Surrogate Recovery (%)								
o-Terphenyl	%	107			106	105		4064896
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene	%	95	95		102	103		4064985
4-Bromofluorobenzene	%	106	104		103	102		4064985
D10-Ethylbenzene	%	121	109		117	112		4064985
D4-1,2-Dichloroethane	%	104	102		101	102		4064985

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1621
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: AKU417
Sample ID: BH-13
Matrix: Water

Collected: 2015/06/10
Relinquished: 2015/06/10
Received: 2015/06/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4064985	N/A	2015/06/15	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4064896	2015/06/13	2015/06/15	Ravinder Gaidhu
Dissolved Metals by ICPMS	ICP/MS	4066400	N/A	2015/06/16	Cristina Petran

Maxxam ID: AKU417 Dup
Sample ID: BH-13
Matrix: Water

Collected: 2015/06/10
Relinquished: 2015/06/10
Received: 2015/06/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4064985	N/A	2015/06/15	Anca Ganea

Maxxam ID: AKU418
Sample ID: BH11
Matrix: Water

Collected: 2015/06/10
Relinquished: 2015/06/10
Received: 2015/06/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4064985	N/A	2015/06/15	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4064896	2015/06/13	2015/06/15	Ravinder Gaidhu
Dissolved Metals by ICPMS	ICP/MS	4066400	N/A	2015/06/16	Cristina Petran

Maxxam ID: AKU419
Sample ID: DUP-01
Matrix: Water

Collected: 2015/06/10
Relinquished: 2015/06/10
Received: 2015/06/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4064985	N/A	2015/06/15	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4064896	2015/06/13	2015/06/15	Ravinder Gaidhu
Dissolved Metals by ICPMS	ICP/MS	4066400	N/A	2015/06/16	Cristina Petran

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1621
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1621
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4064896	RGA	Method Blank	o-Terphenyl	2015/06/15		104	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/15	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2015/06/15	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2015/06/15	<200		ug/L	
4064985	AGA	Method Blank	1,4-Difluorobenzene	2015/06/15		103	%	70 - 130
			4-Bromofluorobenzene	2015/06/15		101	%	70 - 130
			D10-Ethylbenzene	2015/06/15		99	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/15		98	%	70 - 130
			Benzene	2015/06/15	<0.20		ug/L	
			Toluene	2015/06/15	<0.20		ug/L	
			Ethylbenzene	2015/06/15	<0.20		ug/L	
			o-Xylene	2015/06/15	<0.20		ug/L	
			p+m-Xylene	2015/06/15	<0.40		ug/L	
			Total Xylenes	2015/06/15	<0.40		ug/L	
			F1 (C6-C10)	2015/06/15	<25		ug/L	
			F1 (C6-C10) - BTEX	2015/06/15	<25		ug/L	
4066400	CPE	Method Blank	Dissolved Lead (Pb)	2015/06/16	<0.50		ug/L	
4064985	AGA	RPD [AKU417-04]	Benzene	2015/06/15	8.1		%	30
			Toluene	2015/06/15	11		%	30
			Ethylbenzene	2015/06/15	11		%	30
			o-Xylene	2015/06/15	11		%	30
			p+m-Xylene	2015/06/15	10		%	30
			Total Xylenes	2015/06/15	10		%	30
			F1 (C6-C10)	2015/06/15	5.7		%	30
			F1 (C6-C10) - BTEX	2015/06/15	18		%	30
4064985	AGA	Matrix Spike [AKU417-04]	1,4-Difluorobenzene	2015/06/15		94	%	70 - 130
			4-Bromofluorobenzene	2015/06/15		106	%	70 - 130
			D10-Ethylbenzene	2015/06/15		122	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/15		108	%	70 - 130
			Benzene	2015/06/15		NC	%	70 - 130
			Toluene	2015/06/15		NC	%	70 - 130
			Ethylbenzene	2015/06/15		NC	%	70 - 130
			o-Xylene	2015/06/15		NC	%	70 - 130
			p+m-Xylene	2015/06/15		NC	%	70 - 130
			F1 (C6-C10)	2015/06/15		NC	%	70 - 130
4064896	RGA	LCS	o-Terphenyl	2015/06/15		107	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/15		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/15		98	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/15		99	%	60 - 130
4064985	AGA	LCS	1,4-Difluorobenzene	2015/06/15		102	%	70 - 130
			4-Bromofluorobenzene	2015/06/15		99	%	70 - 130
			D10-Ethylbenzene	2015/06/15		98	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/15		102	%	70 - 130
			Benzene	2015/06/15		114	%	70 - 130
			Toluene	2015/06/15		113	%	70 - 130
			Ethylbenzene	2015/06/15		119	%	70 - 130
			o-Xylene	2015/06/15		122	%	70 - 130
			p+m-Xylene	2015/06/15		109	%	70 - 130
			F1 (C6-C10)	2015/06/15		88	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1621
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4066400	CPE	LCS	Dissolved Lead (Pb)	2015/06/16		98	%	80 - 120

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.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1621
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 517667-03-01

517667

INVOICE INFORMATION	REPORT INFORMATION
Company Name:Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name:Parsons
Contact Name: Lorne Wedge	Contact Name: Lisa Pensato
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 1223 Michael Street Suite 100 Ottawa ON K1J7T2
Email: r.lorne.wedge@esso.ca	Email: Lisa.Pensato@parsons.com
Phone: (416) 442-5138 x	Phone: (613) 691-1531 x
Sampler Name (Print): Will Prosper. HP Sheila Barker.	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX / F1	F2-F4	Lead (dissolved)
1	BH-13	X				6	2015/06/10	14:15	X		X	X	X
2	BH11	X				6	2015/06/10	12:00	X		X	X	X
3	DUP-01	X				6	2015/06/10	12:20	X		X	X	X
4							YYYY/MM/DD	HH:MM					
5							YYYY/MM/DD	HH:MM					
6							YYYY/MM/DD	HH:MM					
7							YYYY/MM/DD	HH:MM					
8							YYYY/MM/DD	HH:MM					
9							YYYY/MM/DD	HH:MM					
10							YYYY/MM/DD	HH:MM					

IOL SITE LOCATION:
1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable):
N/A

IOL PROJECT # (if applicable):
MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM:
4410272779-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS ☐ PWQO
☐ Other

SPECIAL INSTRUCTIONS:
Test Samples as per TDG.
ICE - YES
Med/Fine

JARS USED AND NOT SUBMITTED
Enter N/A for Water
N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1						COOLER ID:						COOLER ID:					
CUSTODY SEAL	YES	NO	TEMP	1	2	CUSTODY SEAL	YES	NO	TEMP	1	2	CUSTODY SEAL	YES	NO	TEMP	1	2
PRESENT	✓			1	3	PRESENT						PRESENT					
INTACT	✓			2	2	INTACT						INTACT					
				3						3						3	

LAB USE ONLY
MAXXAM JOB #
B581621
SAMPLES
LABELED BY: HGL
VERIFIED BY: MA

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	SHEILA BARKER printed name	2015/06/10 YYYY/MM/DD	18:00 HH:MM	1. signature	RACHEL DENNY printed name	2015/06/11 YYYY/MM/DD	10:50 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.* Sampling Date: 2015/06/10

Location: *1545 Woodroffe Avenue, Ottawa, Ontario* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B5B1621*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*All field QC samples met the alert limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Lissette Bonilla* Data Reviewed by (Signature):

Review Date: *2015/06/30*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410272779
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 517667-02-01

Attention:Lisa Pensato

Parsons
1223 Michael Street
Suite 100
Ottawa, ON
Canada K1J7T2

Report Date: 2015/06/18
Report #: R3469591
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5B1798
Received: 2015/06/11, 10:50

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	1	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020A m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

Encryption Key Kudrat Bajwa
Kudrat Bajwa
18 Jun 2015 11:39:00 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B5B1798
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		AKV172		
Sampling Date		2015/06/10 13:32		
COC Number		517667-02-01		
	Units	**BH-14**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	0.50	4066159

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1798
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		AKV172		
Sampling Date		2015/06/10 13:32		
COC Number		517667-02-01		
	Units	**BH-14**	**RDL**	**QC Batch**
Benzene	ug/L	7.3	0.20	4064985
Toluene	ug/L	<0.20	0.20	4064985
Ethylbenzene	ug/L	45	0.20	4064985
o-Xylene	ug/L	<0.20	0.20	4064985
p+m-Xylene	ug/L	<0.40	0.40	4064985
Total Xylenes	ug/L	<0.40	0.40	4064985
F1 (C6-C10)	ug/L	130	25	4064985
F1 (C6-C10) - BTEX	ug/L	74	25	4064985
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	4064896
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	4064896
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	4064896
Reached Baseline at C50	ug/L	Yes		4064896
Extraction Surrogate Recovery (%)				
o-Terphenyl	%	104		4064896
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene	%	103		4064985
4-Bromofluorobenzene	%	101		4064985
D10-Ethylbenzene	%	88		4064985
D4-1,2-Dichloroethane	%	96		4064985

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1798
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: AKV172
Sample ID: BH-14
Matrix: Water

Collected: 2015/06/10
Relinquished: 2015/06/10
Received: 2015/06/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4064985	N/A	2015/06/17	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4064896	2015/06/13	2015/06/15	Ravinder Gaidhu
Dissolved Metals by ICPMS	ICP/MS	4066159	N/A	2015/06/16	Cristina Petran

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1798
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1798
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4064896	RGA	Method Blank	o-Terphenyl	2015/06/15		104	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/15	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2015/06/15	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2015/06/15	<200		ug/L	
4064985	AGA	Method Blank	1,4-Difluorobenzene	2015/06/15		103	%	70 - 130
			4-Bromofluorobenzene	2015/06/15		101	%	70 - 130
			D10-Ethylbenzene	2015/06/15		99	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/15		98	%	70 - 130
			Benzene	2015/06/15	<0.20		ug/L	
			Toluene	2015/06/15	<0.20		ug/L	
			Ethylbenzene	2015/06/15	<0.20		ug/L	
			o-Xylene	2015/06/15	<0.20		ug/L	
			p+m-Xylene	2015/06/15	<0.40		ug/L	
			Total Xylenes	2015/06/15	<0.40		ug/L	
			F1 (C6-C10)	2015/06/15	<25		ug/L	
			F1 (C6-C10) - BTEX	2015/06/15	<25		ug/L	
4066159	CPE	Method Blank	Dissolved Lead (Pb)	2015/06/16	<0.50		ug/L	
4064896	RGA	LCS	o-Terphenyl	2015/06/15		107	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/15		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/15		98	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/15		99	%	60 - 130
4064985	AGA	LCS	1,4-Difluorobenzene	2015/06/15		102	%	70 - 130
			4-Bromofluorobenzene	2015/06/15		99	%	70 - 130
			D10-Ethylbenzene	2015/06/15		98	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/15		102	%	70 - 130
			Benzene	2015/06/15		114	%	70 - 130
			Toluene	2015/06/15		113	%	70 - 130
			Ethylbenzene	2015/06/15		119	%	70 - 130
			o-Xylene	2015/06/15		122	%	70 - 130
			p+m-Xylene	2015/06/15		109	%	70 - 130
			F1 (C6-C10)	2015/06/15		88	%	70 - 130
4066159	CPE	LCS	Dissolved Lead (Pb)	2015/06/16		99	%	80 - 120

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B1798
Report Date: 2015/06/18

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 517667-02-01

517667

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Lisa Pensato
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 1223 Michael Street Suite 100 Ottawa ON K1J7T2
Email: r.lorne.wedge@esso.ca	Email: Lisa.Pensato@parsons.com
Phone: (416) 442-5138 x	Phone: (613) 691-1531 x
Sampler Name (Print): Will Prosper	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX / F1	F2-F4	Lead (dissolved)
1	BH-14	X				6	2015/06/10	13:32	X		X	X	X
2							YYYY/MM/DD	HH:MM					
3							YYYY/MM/DD	HH:MM					
4							YYYY/MM/DD	HH:MM					
5							YYYY/MM/DD	HH:MM					
6							YYYY/MM/DD	HH:MM					
7							YYYY/MM/DD	HH:MM					
8							YYYY/MM/DD	HH:MM					
9							YYYY/MM/DD	HH:MM					
10							YYYY/MM/DD	HH:MM					

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410272779-10

REGULATORY CRITERIA / DETECTION LIMITS:
(Please indicate which Reg. version and if RSC required)
- [X] REG 153 Table 5 [ ] 2004 [X] 2011 [ ] RSC
- [ ] ODWS [ ] PWQO
- [ ] Other

SPECIAL INSTRUCTIONS: Test samples as per TOR. ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A.

TURNAROUND TIME
- [X] Standard (5 days)
- [ ] Rush (3 days)
- [ ] (2 days)
- [ ] (1 day)
- [ ] (same day)

Date Required

COOLER ID: 1							COOLER ID:							COOLER ID:						
CUSTODY SEAL	YES	NO	TEMP	0	1	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3	CUSTODY SEAL	YES	NO	TEMP	1	2	3
PRESENT	✓			1	2	3	PRESENT							PRESENT						
INTACT	✓						INTACT							INTACT						

LAB USE ONLY
MAXXAM JOB # B581798

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	Will Prosper	2015/06/10	18:00	1. signature	RACHEL DEVLIN	2015/06/11	10:50
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

SAMPLES
LABELED BY: HGL
VERIFIED BY:

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.* Sampling Date: 2015/06/10

Location: *1545 Woodroffe Avenue, Ottawa, Ontario* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B5B1798*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Lissette Bonilla* Data Reviewed by (Signature):

Review Date: *2015/06/30*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410272779
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 517667-04-01

Attention:Lisa Pensato

Parsons
1223 Michael Street
Suite 100
Ottawa, ON
Canada K1J7T2

Report Date: 2015/06/25
Report #: R3491996
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5B7491
Received: 2015/06/18, 11:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020A m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

Encryption Key

Kudrat Bajwa
25 Jun 2015 10:16:24 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B5B7491
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		ALW900	ALW901	ALW902		
Sampling Date		2015/06/16 10:30	2015/06/16 12:00	2015/06/16 13:00		
COC Number		517667-04-01	517667-04-01	517667-04-01		
	Units	**BH-16**	**BH-10**	**BH12**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	1.6	0.50	4078921

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7491
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		ALW900	ALW900		ALW901	ALW901	ALW902		
Sampling Date		2015/06/16 10:30	2015/06/16 10:30		2015/06/16 12:00	2015/06/16 12:00	2015/06/16 13:00		
COC Number		517667-04-01	517667-04-01		517667-04-01	517667-04-01	517667-04-01		
	Units	**BH-16**	**BH-16 Lab-Dup**	**RDL**	**BH-10**	**BH-10 Lab-Dup**	**BH12**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	52		790	4.0	4075936
Toluene	ug/L	<0.20	<0.20	0.20	190		860	4.0	4075936
Ethylbenzene	ug/L	<0.20	<0.20	0.20	1300		1100	4.0	4075936
o-Xylene	ug/L	<0.20	<0.20	0.20	190		1500	4.0	4075936
p+m-Xylene	ug/L	<0.40	<0.40	0.40	1600		3800	8.0	4075936
Total Xylenes	ug/L	<0.40	<0.40	0.40	1800		5400	8.0	4075936
F1 (C6-C10)	ug/L	87	110	25	8100		18000	500	4075936
F1 (C6-C10) - BTEX	ug/L	87	110	25	4800		10000	500	4075936
F2 (C10-C16 Hydrocarbons)	ug/L	<100		100	1700	1600	5000	100	4077070
F3 (C16-C34 Hydrocarbons)	ug/L	<200		200	<200	<200	520	200	4077070
F4 (C34-C50 Hydrocarbons)	ug/L	<200		200	<200	<200	<200	200	4077070
Reached Baseline at C50	ug/L	Yes			Yes	Yes	Yes		4077070
Extraction Surrogate Recovery (%)									
o-Terphenyl	%	100			103	102	103		4077070
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene	%	101	103		104		103		4075936
4-Bromofluorobenzene	%	97	97		97		97		4075936
D10-Ethylbenzene	%	91	90		93		93		4075936
D4-1,2-Dichloroethane	%	106	105		104		105		4075936

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7491
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: ALW900
Sample ID: BH-16
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4075936	N/A	2015/06/22	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4077070	2015/06/23	2015/06/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	4078921	N/A	2015/06/24	Prempal Bhatti

Maxxam ID: ALW900 Dup
Sample ID: BH-16
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4075936	N/A	2015/06/22	Anca Ganea

Maxxam ID: ALW901
Sample ID: BH-10
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4075936	N/A	2015/06/23	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4077070	2015/06/23	2015/06/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	4078921	N/A	2015/06/24	Prempal Bhatti

Maxxam ID: ALW901 Dup
Sample ID: BH-10
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4077070	2015/06/23	2015/06/24	(Kent) Maolin Li

Maxxam ID: ALW902
Sample ID: BH12
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4075936	N/A	2015/06/23	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4077070	2015/06/23	2015/06/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	4078921	N/A	2015/06/24	Prempal Bhatti

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7491
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.3°C

SQC trend rule failure for Beryllium, Batch #4078921. EWMA greater than 1.5 SD above the mean.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7491
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4075936	AGA	Method Blank	1,4-Difluorobenzene	2015/06/22		99	%	70 - 130
			4-Bromofluorobenzene	2015/06/22		93	%	70 - 130
			D10-Ethylbenzene	2015/06/22		122	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/22		104	%	70 - 130
			Benzene	2015/06/22	<0.20		ug/L	
			Toluene	2015/06/22	<0.20		ug/L	
			Ethylbenzene	2015/06/22	<0.20		ug/L	
			o-Xylene	2015/06/22	<0.20		ug/L	
			p+m-Xylene	2015/06/22	<0.40		ug/L	
			Total Xylenes	2015/06/22	<0.40		ug/L	
			F1 (C6-C10)	2015/06/22	<25		ug/L	
			F1 (C6-C10) - BTEX	2015/06/22	<25		ug/L	
4077070	KLI	Method Blank	o-Terphenyl	2015/06/24		98	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2015/06/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2015/06/24	<200		ug/L	
4078921	PBA	Method Blank	Dissolved Lead (Pb)	2015/06/24	<0.50		ug/L	
4075936	AGA	RPD [ALW900-04]	Benzene	2015/06/22	NC		%	30
			Toluene	2015/06/22	NC		%	30
			Ethylbenzene	2015/06/22	NC		%	30
			o-Xylene	2015/06/22	NC		%	30
			p+m-Xylene	2015/06/22	NC		%	30
			Total Xylenes	2015/06/22	NC		%	30
			F1 (C6-C10)	2015/06/22	NC		%	30
			F1 (C6-C10) - BTEX	2015/06/22	NC		%	30
4077070	KLI	RPD [ALW901-02]	F2 (C10-C16 Hydrocarbons)	2015/06/24	2.0		%	30
			F3 (C16-C34 Hydrocarbons)	2015/06/24	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2015/06/24	NC		%	30
4075936	AGA	Matrix Spike [ALW900-04]	1,4-Difluorobenzene	2015/06/22		100	%	70 - 130
			4-Bromofluorobenzene	2015/06/22		99	%	70 - 130
			D10-Ethylbenzene	2015/06/22		91	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/22		104	%	70 - 130
			Benzene	2015/06/22		108	%	70 - 130
			Toluene	2015/06/22		106	%	70 - 130
			Ethylbenzene	2015/06/22		112	%	70 - 130
			o-Xylene	2015/06/22		116	%	70 - 130
			p+m-Xylene	2015/06/22		101	%	70 - 130
			F1 (C6-C10)	2015/06/22		96	%	70 - 130
4077070	KLI	Matrix Spike [ALW900-02]	o-Terphenyl	2015/06/24		99	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/24		97	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/24		99	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/24		100	%	50 - 130
4075936	AGA	LCS	1,4-Difluorobenzene	2015/06/22		103	%	70 - 130
			4-Bromofluorobenzene	2015/06/22		99	%	70 - 130
			D10-Ethylbenzene	2015/06/22		97	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/22		106	%	70 - 130
			Benzene	2015/06/22		110	%	70 - 130
			Toluene	2015/06/22		106	%	70 - 130
			Ethylbenzene	2015/06/22		111	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7491
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			o-Xylene	2015/06/22		115	%	70 - 130
			p+m-Xylene	2015/06/22		101	%	70 - 130
			F1 (C6-C10)	2015/06/22		117	%	70 - 130
4077070	KLI	LCS	o-Terphenyl	2015/06/24		100	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/24		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/24		99	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/24		99	%	60 - 130
4078921	PBA	LCS	Dissolved Lead (Pb)	2015/06/24		103	%	80 - 120

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7491
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 517667-04-01

517667

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Lisa Pensato
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 1223 Michael Street Suite 100 Ottawa ON K1J7T2
Email: r.lorne.wedge@esso.ca	Email: Lisa.Pensato@parsons.com
Phone: (416) 442-5138 x	Phone: (613) 691-1531 x
Sampler Name (Print): Sheila Barter	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX / F1	F2-F4	Lead	Sheen present Based with analysis																
1	BH-16	X				6	2015/06/16	10:30	X		X	X	X																	
2	BH-10	X				6	2015/06/16	12:00	X		X	X	X																	
3	BH12	X				6	2015/06/16	13:00	X		X	X	X	X																
4							YYYY/MM/DD	HH:MM																						
5							YYYY/MM/DD	HH:MM																						
6							YYYY/MM/DD	HH:MM																						
7							YYYY/MM/DD	HH:MM																						
8							YYYY/MM/DD	HH:MM																						
9							YYYY/MM/DD	HH:MM																						
10							YYYY/MM/DD	HH:MM																						

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410272779-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☐ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS I/C/C ☐ PWQO

☐ Other MED/FINE

SPECIAL INSTRUCTIONS: Test samples as per TDG

ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID: 1	YES	NO
CUSTODY SEAL PRESENT	✓	
CUSTODY SEAL INTACT	✓	

TEMP: 1: 0 | 2: 0 | 3: 1

COOLER ID:	YES	NO
CUSTODY SEAL PRESENT		
CUSTODY SEAL INTACT		

TEMP: 1 | 2 | 3

COOLER ID:	YES	NO
CUSTODY SEAL PRESENT		
CUSTODY SEAL INTACT		

TEMP: 1 | 2 | 3

LAB USE ONLY

MAXXAM JOB # B5B7491

SAMPLES

LABELED BY: RGN VERIFIED BY: ABH

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	SHEILA BARTER	2015/06/17	18:00	1. signature	RACHEL DEVLIN	2015/06/18	11:00
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.* Sampling Date: 2015/06/16

Location: *1545 Woodroffe Avenue, Ottawa, Ontario* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B5B7491*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Lissette Bonilla* Data Reviewed by (Signature):

Review Date: *2015/06/30*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410272779
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 517667-07-01

Attention:Lisa Pensato

Parsons
1223 Michael Street
Suite 100
Ottawa, ON
Canada K1J7T2

Report Date: 2015/06/25
Report #: R3492040
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5B7507
Received: 2015/06/18, 11:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	3	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	3	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	3	CAM SOP-00447	EPA 6020A m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

Encryption Key

Kudrat Bajwa
25 Jun 2015 10:22:36 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B5B7507
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		ALW958	ALW959	ALW960		
Sampling Date		2015/06/16 14:15	2015/06/16 15:30	2015/06/16 16:45		
COC Number		517667-07-01	517667-07-01	517667-07-01		
	Units	**BH-15**	**BH8**	**BH5**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.50	4078921

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7507
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		ALW958	ALW958	ALW959		ALW960		
Sampling Date		2015/06/16 14:15	2015/06/16 14:15	2015/06/16 15:30		2015/06/16 16:45		
COC Number		517667-07-01	517667-07-01	517667-07-01		517667-07-01		
	Units	**BH-15**	**BH-15 Lab-Dup**	**BH8**	**RDL**	**BH5**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	20	0.20	100	4.0	4077678
Toluene	ug/L	<0.20	<0.20	2.2	0.20	7.7	4.0	4077678
Ethylbenzene	ug/L	<0.20	<0.20	210	0.20	1100	4.0	4077678
o-Xylene	ug/L	<0.20	<0.20	6.4	0.20	190	4.0	4077678
p+m-Xylene	ug/L	<0.40	<0.40	62	0.40	3600	8.0	4077678
Total Xylenes	ug/L	<0.40	<0.40	68	0.40	3800	8.0	4077678
F1 (C6-C10)	ug/L	<25	<25	460	25	11000	500	4077678
F1 (C6-C10) - BTEX	ug/L	<25	<25	160	25	6200	500	4077678
F2 (C10-C16 Hydrocarbons)	ug/L	<100		480	100	5100	100	4077070
F3 (C16-C34 Hydrocarbons)	ug/L	<200		<200	200	<200	200	4077070
F4 (C34-C50 Hydrocarbons)	ug/L	<200		<200	200	<200	200	4077070
Reached Baseline at C50	ug/L	Yes		Yes		Yes		4077070
Extraction Surrogate Recovery (%)								
o-Terphenyl	%	102		102		101		4077070
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene	%	99	100	100		99		4077678
4-Bromofluorobenzene	%	99	100	99		102		4077678
D10-Ethylbenzene	%	104	106	105		104		4077678
D4-1,2-Dichloroethane	%	96	99	97		96		4077678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7507
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: ALW958
Sample ID: BH-15
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4077678	N/A	2015/06/23	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4077070	2015/06/23	2015/06/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	4078921	N/A	2015/06/24	Prempal Bhatti

Maxxam ID: ALW958 Dup
Sample ID: BH-15
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4077678	N/A	2015/06/23	Sung Ho Kim

Maxxam ID: ALW959
Sample ID: BH8
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4077678	N/A	2015/06/24	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4077070	2015/06/23	2015/06/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	4078921	N/A	2015/06/24	Prempal Bhatti

Maxxam ID: ALW960
Sample ID: BH5
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/17
Received: 2015/06/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4077678	N/A	2015/06/23	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4077070	2015/06/23	2015/06/24	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	4078921	N/A	2015/06/24	Prempal Bhatti

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7507
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C

SQC trend rule failure for Beryllium, Batch #4078921. EWMA greater than 1.5 SD above the mean.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7507
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4077070	KLI	Method Blank	o-Terphenyl	2015/06/24		98	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/24	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2015/06/24	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2015/06/24	<200		ug/L	
4077678	SHK	Method Blank	1,4-Difluorobenzene	2015/06/23		99	%	70 - 130
			4-Bromofluorobenzene	2015/06/23		101	%	70 - 130
			D10-Ethylbenzene	2015/06/23		101	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/23		97	%	70 - 130
			Benzene	2015/06/23	<0.20		ug/L	
			Toluene	2015/06/23	<0.20		ug/L	
			Ethylbenzene	2015/06/23	<0.20		ug/L	
			o-Xylene	2015/06/23	<0.20		ug/L	
			p+m-Xylene	2015/06/23	<0.40		ug/L	
			Total Xylenes	2015/06/23	<0.40		ug/L	
			F1 (C6-C10)	2015/06/23	<25		ug/L	
			F1 (C6-C10) - BTEX	2015/06/23	<25		ug/L	
4078921	PBA	Method Blank	Dissolved Lead (Pb)	2015/06/24	<0.50		ug/L	
4077678	SHK	RPD [ALW958-04]	Benzene	2015/06/23	NC		%	30
			Toluene	2015/06/23	NC		%	30
			Ethylbenzene	2015/06/23	NC		%	30
			o-Xylene	2015/06/23	NC		%	30
			p+m-Xylene	2015/06/23	NC		%	30
			Total Xylenes	2015/06/23	NC		%	30
			F1 (C6-C10)	2015/06/23	NC		%	30
			F1 (C6-C10) - BTEX	2015/06/23	NC		%	30
4077678	SHK	Matrix Spike [ALW958-04]	1,4-Difluorobenzene	2015/06/23		101	%	70 - 130
			4-Bromofluorobenzene	2015/06/23		100	%	70 - 130
			D10-Ethylbenzene	2015/06/23		97	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/23		96	%	70 - 130
			Benzene	2015/06/23		104	%	70 - 130
			Toluene	2015/06/23		103	%	70 - 130
			Ethylbenzene	2015/06/23		114	%	70 - 130
			o-Xylene	2015/06/23		109	%	70 - 130
			p+m-Xylene	2015/06/23		105	%	70 - 130
			F1 (C6-C10)	2015/06/23		75	%	70 - 130
4077070	KLI	LCS	o-Terphenyl	2015/06/24		100	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/24		96	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/24		99	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/24		99	%	60 - 130
4077678	SHK	LCS	1,4-Difluorobenzene	2015/06/23		97	%	70 - 130
			4-Bromofluorobenzene	2015/06/23		98	%	70 - 130
			D10-Ethylbenzene	2015/06/23		91	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/23		95	%	70 - 130
			Benzene	2015/06/23		100	%	70 - 130
			Toluene	2015/06/23		98	%	70 - 130
			Ethylbenzene	2015/06/23		107	%	70 - 130
			o-Xylene	2015/06/23		107	%	70 - 130
			p+m-Xylene	2015/06/23		101	%	70 - 130
			F1 (C6-C10)	2015/06/23		100	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7507
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4078921	PBA	LCS	Dissolved Lead (Pb)	2015/06/24		103	%	80 - 120

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B7507
Report Date: 2015/06/25

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 517667-07-01

517667

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Lisa Pensato
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 1223 Michael Street Suite 100 Ottawa ON K1J7T2
Email: r.lorne.wedge@esso.ca	Email: Lisa.Pensato@parsons.com
Phone: (416) 442-5138 x	Phone: (613) 691-1531 x
Sampler Name (Print): SHEILA BARTER	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX / F1	F2-F4	Lead
1	BH-15	X				6	2015/06/16	14:15	X		X	X	X
2	BH8	X				6	2015/06/16	15:30	X		X	X	X
3	BH5	X				6	2015/06/16	16:45	X		X	X	X
4							YYYY/MM/DD	HH:MM					
5							YYYY/MM/DD	HH:MM					
6							YYYY/MM/DD	HH:MM					
7							YYYY/MM/DD	HH:MM					
8							YYYY/MM/DD	HH:MM					
9							YYYY/MM/DD	HH:MM					
10							YYYY/MM/DD	HH:MM					

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410272779-10

REGULATORY CRITERIA / DETECTION LIMITS:

☒ REG 153 Table 3 ☐ 2004 ☐ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)

☐ ODWS I/C/C ☐ PWQO

☐ Other MED/FINE

SPECIAL INSTRUCTIONS: Test samples as per TOR

ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME

Standard	(5 days)	☒
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐

Date Required

COOLER ID:	CUSTODY SEAL PRESENT	CUSTODY SEAL INTACT	TEMP 1	TEMP 2	TEMP 3
	YES / NO	YES / NO	0	2	3

COOLER ID:	CUSTODY SEAL PRESENT	CUSTODY SEAL INTACT	TEMP 1	TEMP 2	TEMP 3
	YES / NO	YES / NO			

COOLER ID:	CUSTODY SEAL PRESENT	CUSTODY SEAL INTACT	TEMP 1	TEMP 2	TEMP 3
	YES / NO	YES / NO			

LAB USE ONLY

MAXXAM JOB # B5B7507

SAMPLES

RELINQUISHED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR): HH:MM	RECEIVED BY:	printed name	DATE: YYYY/MM/DD	TIME (24 HR): HH:MM
1. signature	SHEILA BARTER	2015/06/17	18:00	1. signature	RACHEL DEVLIN	2015/06/18	11:00
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

LABELED BY: RGN

VERIFIED BY: ABH

COC – 1012 (2013) IOL – ON

White: Maxxam

Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.* Sampling Date: 2015/06/16

Location: *1545 Woodroffe Avenue, Ottawa, Ontario* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B5B7507*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Lissette Bonilla* Data Reviewed by (Signature):

Review Date: *2015/06/30*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410272779
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 517667-05-01

Attention:Lisa Pensato

Parsons
1223 Michael Street
Suite 100
Ottawa, ON
Canada K1J7T2

Report Date: 2015/06/29
Report #: R3510500
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5B8851
Received: 2015/06/19, 13:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	1	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	1	CAM SOP-00447	EPA 6020A m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

Encryption Key

Kudrat Bajwa
29 Jun 2015 11:01:25 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B5B8851
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		AMC862		
Sampling Date		2015/06/16 17:55		
COC Number		517667-05-01		
	Units	**BH7**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	0.50	4081081

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8851
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		AMC862	AMC862		
Sampling Date		2015/06/16 17:55	2015/06/16 17:55		
COC Number		517667-05-01	517667-05-01		
	Units	**BH7**	**BH7 Lab-Dup**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	4080051
Toluene	ug/L	<0.20	<0.20	0.20	4080051
Ethylbenzene	ug/L	<0.20	<0.20	0.20	4080051
o-Xylene	ug/L	<0.20	<0.20	0.20	4080051
p+m-Xylene	ug/L	<0.40	<0.40	0.40	4080051
Total Xylenes	ug/L	<0.40	<0.40	0.40	4080051
F1 (C6-C10)	ug/L	<25	<25	25	4080051
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	4080051
F2 (C10-C16 Hydrocarbons)	ug/L	<100		100	4078793
F3 (C16-C34 Hydrocarbons)	ug/L	<200		200	4078793
F4 (C34-C50 Hydrocarbons)	ug/L	<200		200	4078793
Reached Baseline at C50	ug/L	Yes			4078793
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	100			4078793
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	107	107		4080051
4-Bromofluorobenzene	%	95	95		4080051
D10-Ethylbenzene	%	90	90		4080051
D4-1,2-Dichloroethane	%	102	103		4080051

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8851
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: AMC862
Sample ID: BH7
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/16
Received: 2015/06/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4080051	N/A	2015/06/25	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4078793	2015/06/24	2015/06/26	Biljana Lazovic
Dissolved Metals by ICPMS	ICP/MS	4081081	N/A	2015/06/25	Cristina Petran

Maxxam ID: AMC862 Dup
Sample ID: BH7
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/16
Received: 2015/06/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4080051	N/A	2015/06/25	Anca Ganea

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8851
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8851
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4078793	BLZ	Method Blank	o-Terphenyl	2015/06/26		103	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/26	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2015/06/26	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2015/06/26	<200		ug/L	
4080051	AGA	Method Blank	1,4-Difluorobenzene	2015/06/25		101	%	70 - 130
			4-Bromofluorobenzene	2015/06/25		99	%	70 - 130
			D10-Ethylbenzene	2015/06/25		100	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/25		101	%	70 - 130
			Benzene	2015/06/25	<0.20		ug/L	
			Toluene	2015/06/25	<0.20		ug/L	
			Ethylbenzene	2015/06/25	<0.20		ug/L	
			o-Xylene	2015/06/25	<0.20		ug/L	
			p+m-Xylene	2015/06/25	<0.40		ug/L	
			Total Xylenes	2015/06/25	<0.40		ug/L	
			F1 (C6-C10)	2015/06/25	<25		ug/L	
			F1 (C6-C10) - BTEX	2015/06/25	<25		ug/L	
4081081	CPE	Method Blank	Dissolved Lead (Pb)	2015/06/25	<0.50		ug/L	
4080051	AGA	RPD [AMC862-04]	Benzene	2015/06/25	NC		%	30
			Toluene	2015/06/25	NC		%	30
			Ethylbenzene	2015/06/25	NC		%	30
			o-Xylene	2015/06/25	NC		%	30
			p+m-Xylene	2015/06/25	NC		%	30
			Total Xylenes	2015/06/25	NC		%	30
			F1 (C6-C10)	2015/06/25	NC		%	30
			F1 (C6-C10) - BTEX	2015/06/25	NC		%	30
4078793	BLZ	Matrix Spike [AMC862-02]	o-Terphenyl	2015/06/26		105	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/26		113	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/26		106	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/26		101	%	50 - 130
4080051	AGA	Matrix Spike [AMC862-04]	1,4-Difluorobenzene	2015/06/25		104	%	70 - 130
			4-Bromofluorobenzene	2015/06/25		99	%	70 - 130
			D10-Ethylbenzene	2015/06/25		93	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/25		104	%	70 - 130
			Benzene	2015/06/25		110	%	70 - 130
			Toluene	2015/06/25		108	%	70 - 130
			Ethylbenzene	2015/06/25		114	%	70 - 130
			o-Xylene	2015/06/25		118	%	70 - 130
			p+m-Xylene	2015/06/25		103	%	70 - 130
			F1 (C6-C10)	2015/06/25		78	%	70 - 130
4078793	BLZ	LCS	o-Terphenyl	2015/06/26		106	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/26		113	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/26		107	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/26		102	%	60 - 130
4080051	AGA	LCS	1,4-Difluorobenzene	2015/06/25		103	%	70 - 130
			4-Bromofluorobenzene	2015/06/25		99	%	70 - 130
			D10-Ethylbenzene	2015/06/25		91	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/25		103	%	70 - 130
			Benzene	2015/06/25		111	%	70 - 130
			Toluene	2015/06/25		108	%	70 - 130

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8851
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Ethylbenzene	2015/06/25		115	%	70 - 130
			o-Xylene	2015/06/25		116	%	70 - 130
			p+m-Xylene	2015/06/25		104	%	70 - 130
			F1 (C6-C10)	2015/06/25		105	%	70 - 130
4081081	CPE	LCS	Dissolved Lead (Pb)	2015/06/25		99	%	80 - 120

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.

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8851
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 517667-05-01

517667

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Lisa Pensato
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 1223 Michael Street Suite 100 Ottawa ON K1J7T2
Email: r.lorne.wedge@esso.ca	Email: Lisa.Pensato@parsons.com
Phone: (416) 442-5138 x	Phone: (613) 691-1531 x
Sampler Name (Print): SHEILA BARTER	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX / F1	F2-F4	Lead (dissolved)																
1	BH7	X				6	2015/06/16	17:55	X		X	X	X																
2							YYYY/MM/DD	HH:MM																					
3							YYYY/MM/DD	HH:MM																					
4							YYYY/MM/DD	HH:MM																					
5							YYYY/MM/DD	HH:MM																					
6							YYYY/MM/DD	HH:MM																					
7							YYYY/MM/DD	HH:MM																					
8							YYYY/MM/DD	HH:MM																					
9							YYYY/MM/DD	HH:MM																					
10							YYYY/MM/DD	HH:MM																					

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410272779-10

REGULATORY CRITERIA / DETECTION LIMITS:

- [X] REG 153 Table 3 [ ] 2004 [X] 2011 [ ] RSC (Please indicate which Reg. version and if RSC required)
- [ ] ODWS I/C/C [ ] PWQO
- [ ] Other MED/FINE

SPECIAL INSTRUCTIONS: Test Samples as per TDG

ICE - YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME

- Standard (5 days) [X]
- Rush (3 days) [ ]
- (2 days) [ ]
- (1 day) [ ]
- (same day) [ ]

Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL						
PRESENT	✓			6	4	4
INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL						
PRESENT						
INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL						
PRESENT						
INTACT						

LAB USE ONLY

MAXXAM JOB #: B5B8851

SAMPLES

LABELED BY: RGN VERIFIED BY: T-L

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	SHEILA BARTER printed name	2015/06/16 YYYY/MM/DD	19:00 HH:MM	1. signature	FANG WANG printed name	2015/06/19 YYYY/MM/DD	13:00 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.* Sampling Date: 2015/06/16

Location: *1545 Woodroffe Avenue, Ottawa, Ontario* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B5B8851*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Lissette Bonilla* Data Reviewed by (Signature):

Review Date: *2015/06/30*

Revision Date (if applicable): Revised by (Signature):

Task Order#: 4410272779
Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02
Your C.O.C. #: 517667-06-01

Attention:Lisa Pensato

Parsons
1223 Michael Street
Suite 100
Ottawa, ON
Canada K1J7T2

Report Date: 2015/06/29
Report #: R3510494
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5B8860
Received: 2015/06/19, 13:00

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Primary Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water	2	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	2	CAM SOP-00447	EPA 6020A m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by GUCSO and O.Reg 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.

All data is in statistical control and has met all QC and method performance criteria unless otherwise flagged. All samples were analysed within hold time unless otherwise flagged. All soil samples for BTEX analysis were methanol extracted within 24 hours unless otherwise flagged.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

Encryption Key

Kudrat Bajwa
29 Jun 2015 10:57:29 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kudrat Bajwa, B.Sc., Project Manager
Email: KBajwa@maxxam.ca
Phone# (905)817-5822

==========

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

Maxxam Job #: B5B8860
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

LEAD (DISSOLVED) IN WATER

Maxxam ID		AMC879	AMC880		
Sampling Date		2015/06/16 18:15	2015/06/16 18:30		
COC Number		517667-06-01	517667-06-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	4076436

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8860
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

O.REG 153 PHCS IN WATER (WATER)

Maxxam ID		AMC879	AMC880		
Sampling Date		2015/06/16 18:15	2015/06/16 18:30		
COC Number		517667-06-01	517667-06-01		
	Units	**FIELD BLANK-01**	**TRIP BLANK-01**	**RDL**	**QC Batch**
Benzene	ug/L	<0.20	<0.20	0.20	4079807
Toluene	ug/L	<0.20	<0.20	0.20	4079807
Ethylbenzene	ug/L	<0.20	<0.20	0.20	4079807
o-Xylene	ug/L	<0.20	<0.20	0.20	4079807
p+m-Xylene	ug/L	<0.40	<0.40	0.40	4079807
Total Xylenes	ug/L	<0.40	<0.40	0.40	4079807
F1 (C6-C10)	ug/L	<25	<25	25	4079807
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	4079807
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	4078793
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	4078793
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	4078793
Reached Baseline at C50	ug/L	Yes	Yes		4078793
Extraction Surrogate Recovery (%)					
o-Terphenyl	%	101	100		4078793
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene	%	105	105		4079807
4-Bromofluorobenzene	%	95	99		4079807
D10-Ethylbenzene	%	96	97		4079807
D4-1,2-Dichloroethane	%	103	101		4079807

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8860
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

TEST SUMMARY

Maxxam ID: AMC879
Sample ID: FIELD BLANK- 01
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/16
Received: 2015/06/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4079807	N/A	2015/06/25	Simon Xi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4078793	2015/06/24	2015/06/26	Biljana Lazovic
Dissolved Metals by ICPMS	ICP/MS	4076436	N/A	2015/06/23	Cristina Petran

Maxxam ID: AMC880
Sample ID: TRIP BLANK-01
Matrix: Water

Collected: 2015/06/16
Relinquished: 2015/06/16
Received: 2015/06/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4079807	N/A	2015/06/25	Simon Xi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4078793	2015/06/24	2015/06/26	Biljana Lazovic
Dissolved Metals by ICPMS	ICP/MS	4076436	N/A	2015/06/23	Cristina Petran

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8860
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8860
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
4076436	CPE	Method Blank	Dissolved Lead (Pb)	2015/06/23	<0.50		ug/L	
4078793	BLZ	Method Blank	o-Terphenyl	2015/06/26		103	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/26	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2015/06/26	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2015/06/26	<200		ug/L	
4079807	JXI	Method Blank	1,4-Difluorobenzene	2015/06/25		104	%	70 - 130
			4-Bromofluorobenzene	2015/06/25		97	%	70 - 130
			D10-Ethylbenzene	2015/06/25		93	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/25		101	%	70 - 130
			Benzene	2015/06/25	<0.20		ug/L	
			Toluene	2015/06/25	<0.20		ug/L	
			Ethylbenzene	2015/06/25	<0.20		ug/L	
			o-Xylene	2015/06/25	<0.20		ug/L	
			p+m-Xylene	2015/06/25	<0.40		ug/L	
			Total Xylenes	2015/06/25	<0.40		ug/L	
			F1 (C6-C10)	2015/06/25	<25		ug/L	
			F1 (C6-C10) - BTEX	2015/06/25	<25		ug/L	
4076436	CPE	LCS	Dissolved Lead (Pb)	2015/06/23		95	%	80 - 120
4078793	BLZ	LCS	o-Terphenyl	2015/06/26		106	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2015/06/26		113	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2015/06/26		107	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2015/06/26		102	%	60 - 130
4079807	JXI	LCS	1,4-Difluorobenzene	2015/06/25		106	%	70 - 130
			4-Bromofluorobenzene	2015/06/25		99	%	70 - 130
			D10-Ethylbenzene	2015/06/25		87	%	70 - 130
			D4-1,2-Dichloroethane	2015/06/25		102	%	70 - 130
			Benzene	2015/06/25		105	%	70 - 130
			Toluene	2015/06/25		102	%	70 - 130
			Ethylbenzene	2015/06/25		106	%	70 - 130
			o-Xylene	2015/06/25		111	%	70 - 130
			p+m-Xylene	2015/06/25		99	%	70 - 130
			F1 (C6-C10)	2015/06/25		105	%	70 - 130

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

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

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5B8860
Report Date: 2015/06/29

Parsons
Task Order#: 4410272779, Line Item: 10
Site#: MZ.00151
Site Location: N/A;1545 WOODROFFE AVENUE, OTTAWA, ON
Project #: 10-8518T02

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

6740 Campobello Road
Mississauga, Ontario L5N 2L8
www.maxxam.ca

Phone: (905) 817-5700
Fax: (905) 817-5777
Toll Free: 800-563-6266

EXXONMOBIL/IMPERIAL OIL - MAXXAM
CHAIN-OF-CUSTODY RECORD
ANALYSIS REQUESTED

C of C # 517667-06-01

517667

INVOICE INFORMATION	REPORT INFORMATION
Company Name: Imperial Oil, a partnership of Imperial Oil Limited and McColl Frontenac Petrole	Company Name: Parsons
Contact Name: Lorne Wedge	Contact Name: Lisa Pensato
Address: 1 Duncan Mill Road North York ON M3B 1Z2	Address: 1223 Michael Street Suite 100 Ottawa ON K1J7T2
Email: r.lorne.wedge@esso.ca	Email: Lisa.Pensato@parsons.com
Phone: (416) 442-5138 x	Phone: (613) 691-1531 x
Sampler Name (Print): SHEILA BARTER	Consultant Project #: 10-8518T02

	FIELD SAMPLE ID	MATRIX: GROUNDWATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	BTEX / F1	F2-F4	Lead (dissolved)
1	Field Blank-01				X	6	2015/06/16	18:15	X		X	X	X
2	Trip Blank - 01				X	4	2015/06/16	18:30	X		X	X	X
3							YYYY/MM/DD	HH:MM					
4							YYYY/MM/DD	HH:MM					
5							YYYY/MM/DD	HH:MM					
6							YYYY/MM/DD	HH:MM					
7							YYYY/MM/DD	HH:MM					
8							YYYY/MM/DD	HH:MM					
9							YYYY/MM/DD	HH:MM					
10							YYYY/MM/DD	HH:MM					

IOL SITE LOCATION: 1545 WOODROFFE AVENUE, OTTAWA, ON

IOL SITE # (if applicable): N/A

IOL PROJECT # (if applicable): MZ.00151

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 4410272779-10

REGULATORY CRITERIA / DETECTION LIMITS:
☒ REG 153 Table 3 ☐ 2004 ☒ 2011 ☐ RSC
(Please indicate which Reg. version and if RSC required)
☐ ODWS I/C/C ☐ PWQO
☐ Other MED/FINE

SPECIAL INSTRUCTIONS: Test samples as per TDG
ICE-YES

JARS USED AND NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

COOLER ID: 1	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT	✓			6	4	4
CUSTODY SEAL INTACT	✓					

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

COOLER ID:	YES	NO	TEMP	1	2	3
CUSTODY SEAL PRESENT						
CUSTODY SEAL INTACT						

LAB USE ONLY
MAXXAM JOB # B5B8860

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. signature	SHEILA BARTER printed name	2015/06/16 YYYY/MM/DD	19:00 HH:MM	1. signature	FANG WANG printed name	2015/06/19 YYYY/MM/DD	13:00 HH:MM
2. signature	printed name	YYYY/MM/DD	HH:MM	2. signature	printed name	YYYY/MM/DD	HH:MM
3. signature	printed name	YYYY/MM/DD	HH:MM	3. signature	printed name	YYYY/MM/DD	HH:MM

SAMPLES
LABELED BY: RGN
VERIFIED BY: I-C

COC – 1012 (2013) IOL – ON White: Maxxam Yellow: Client

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Canada Ltd.* Sampling Date: 2015/06/16

Location: *1545 Woodroffe Avenue, Ottawa, Ontario* Laboratory: *Maxxam Analytics Inc.*

Consultant Project Number: *10-8518T02* Laboratory Job Number: *B5B8860*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Instrument Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Extraction Surrogate Recovery	*X*			
Method Blank Concentration	*X*			
Matrix Duplicate RPD			*X*	
Matrix Spike Recovery			*X*	
Lab Control Sample Recovery/Spiked Blank	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration	*X*			*All field QC samples met the alert limits.*
Trip Blank Concentration	*X*			
Field Duplicate RPD			*X*	

Has CofA been signed off (Yes/No)?:	*Yes*
Has lab warranted all tests were in statistical control in CofA (Yes/No)?:	*Yes*
Has lab warranted all tests were analyzed following SOP's in CofA (Yes, No or N/A)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes, No or N/A)?:	*Yes*

Was a Data Quality Waiver (DQW) issued (Yes, No or N/A)?: *No*

Date Issued: *N/A* Date of Response: *N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Data Reviewed by (Print): *Lissette Bonilla* Data Reviewed by (Signature):

Review Date: *2015/06/30*

Revision Date (if applicable): Revised by (Signature):

APPENDIX C

QUALITY ASSURANCE AND QUALITY CONTROL

QUALITY ASSURANCE AND QUALITY CONTROL DISCUSSION

The lab and field QA/QC issues identified in this report are summarized in Table C-1.

The groundwater field QA/QC program consisted of one field duplicate, one field blank, and one trip blank for the analysis of BTEX, PHC fractions F1 to F4 and lead.

For the field duplicate samples, evaluations of the QA/QC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit.

The designated field duplicate RPD alert limits are presented in Table C-2 for groundwater. As indicated, all of the RPDs were within acceptable limits.

The water trip blank and field blank data were compared to the alert limits and are presented in Table C-3. As indicated, all of the RPDs were within acceptable limits.

The laboratory QA/QC program consisted of one or more of the following analysis (a) instrument and extraction surrogate recoveries for groundwater samples that were analyzed, and (b) the analysis of method blank, laboratory duplicate, matrix spike and/or laboratory control samples for the sample analytical batches that were analyzed. The laboratory QA/QC results are presented in the certificates of analysis. No laboratory QA/QC issues were identified, with the exceptions presented in Table C-1.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

TABLE C-1

FIELD AND LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL ISSUES

Maxxam Job #	Lab Sample ID	DQW Number	Sample Name	Matrix	Test Affected	Deviation	Interpretation
B5B7507	ALW958 ALW959 ALW960	N/A	BH-15 BH8 BH5	Water	Metals	Trend rule failure for beryllium with an exponentially weighted moving average greater than 1.5 standard deviation above the mean.	There is a potential high bias in the results. However the sample analytical results were significantly below the site condition standards. In addition, all other lab quality controls met the acceptance criteria. The test method trend rule violation should not materially affect the interpretation of the results for this analytical batch.
B5B7491	ALW900 ALW901 ALW902	N/A	BH-16 BH-10 BH12	Water	Metals	Trend rule failure for beryllium with an exponentially weighted moving average greater than 1.5 standard deviation above the mean.	There is a potential high bias in the results. However the sample analytical results were significantly below the site condition standards. In addition, all other lab quality controls met the acceptance criteria. The test method trend rule violation should not materially affect the interpretation of the results for this analytical batch.

N/A – Not applicable

TABLE C-2

RELATIVE PERCENT DIFFERENCE CALCULATIONS - GROUNDWATER FIELD DUPLICATE SAMPLES
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	BH11	RDL	DUP-01 FIELD DUPLICATE BH11	RDL	RPD	RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	B5B1621V1		B5B1621V1			
Maxxam Sample ID	AKU418		AKU419			
Date Sampled (yyyy/mm/dd)	2015/06/10		2015/06/10			
PARAMETERS						
Benzene	11	1.0	10	1.0	10%	80
Toluene	100	1.0	98	1.0	2%	80
Ethylbenzene	470	1.0	440	1.0	7%	80
Total Xylenes	2200	2.0	2000	2.0	10%	80
Petroleum Hydrocarbons F1 (C6 - C10)[b]	3600	130	4000	130	11%	80
Petroleum Hydrocarbons F2 (>C10 - C16)[c]	2200	100	2100	100	5%	80
Petroleum Hydrocarbons F3 (>C16 - C34)[d]	<200	200	<200	200	NC	80
Petroleum Hydrocarbons F4 (>C34 - C50)	<200	200	<200	200	NC	80
Lead	3.4	0.50	3.6	0.50	6%	50

a - Alert limits used for field duplicate samples
b - BTEX have been subtracted from the fraction
c - Naphthalene has not been subtracted from the fraction
d - PAHs have not been subtracted from the fraction
NA - Not applicable
NC - Not calculated
RDL - Reportable Detection Limit
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL)
"-" - Not analyzed
BOLD - Exceeds RPD alert limit
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.

TABLE C-3

GROUNDWATER FIELD BLANK AND TRIP BLANK DATA
PETROLEUM HYDROCARBON PARAMETERS AND LEAD

SAMPLE LOCATIONS	RDL	FIELD BLANK- 01		TRIP BLANK-01	
Maxxam Certificate of Analysis No.		B5B8860V1	EXCEEDS ALERT LIMIT (yes/no)	B5B8860V1	EXCEEDS ALERT LIMIT (yes/no)
Maxxam Sample ID		AMC879		AMC880	
Date Sampled (yyyy/mm/dd)		2015/06/16		2015/06/16	
PARAMETERS					
Benzene	0.2	<0.20	No	<0.20	No
Toluene	0.2	<0.20	No	<0.20	No
Ethylbenzene	0.2	<0.20	No	<0.20	No
Total Xylenes	0.4	<0.40	No	<0.40	No
Petroleum Hydrocarbons F1 (C6 - C10)[a]	25	<25	No	<25	No
Petroleum Hydrocarbons F2 (>C10 - C16)[b]	100	<100	No	<100	No
Petroleum Hydrocarbons F3 (>C16 - C34)[c]	200	<200	No	<200	No
Petroleum Hydrocarbons F4 (>C34 - C50)	200	<200	No	<200	No
Lead	0.5	<0.50	No	<0.50	No

a - BTEX have been subtracted from the fraction
b - Naphthalene has not been subtracted from the fraction
c - PAHs have not been subtracted from the fraction
RDL - Reportable detection limit
"-" - Not analyzed
BOLD - Exceeds alert limit
Note - Alert limits for field blanks and trip blanks are 5x RDL for BTEX and lead; 2x RDL for petroleum hydrocarbons fractions F1 to F4.
Results for all parameters are reported in micrograms per litre (µg/L)
The specific date each sample was analyzed for each parameter is presented in the laboratory Certificates of Analysis.