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A REPORT TO THE TOWNSHIP OF UXBRIDGE

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PROPOSED CULVERT REPLACEMENT

CENTENNIAL DRIVE TO NORTH OF BROCK STREET

THE TOWNSHIP OF UXBRIDGE

Reference No. 1204-S048E

August 24, 2012

DISTRIBUTION

3 Copies - GHD

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One must understand that the mandate of Soil Engineers Ltd. is to obtain readily available past and present information pertinent to the subject site and to analyse representative soil and groundwater samples for a Phase Two Environmental Site Assessment only. No other warranty or representation, expressed or implied, as to the accuracy of the information included or intended by this assessment. Site conditions, environmental or otherwise, are not static and this report documents site conditions observed at the time of the last sampling.

It should be noted that the information supplied in this report may not be sufficient to obtain approval for disposal of excess soil or materials generated during construction.

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ENCLOSURES

1.0 EXECUTIVE SUMMARY

Soil Engineers Ltd. was retained by SRM Associates (A Member of the Sernas Group Inc.) to carry out a Phase Two Environmental Site Assessment (hereinafter referred to as "ESA") at a parcel of land extending north from Centennial Drive to north of Brock Street, in the Township of Uxbridge.

The purpose of the investigation is to establish a chemical profile of the current soil and groundwater conditions at the subject site based on the recommendations given in our Phase One ESA report, Reference No. 1204-S048E, dated August 10, 2012.

The field work was performed on selected locations on the subject site. Soil and groundwater samples were submitted for chemical analyses in accordance with the fine and medium textured soil quality criteria set out in the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), April 15, 2011. Samples retrieved at areas within 30 m of the adjacent watercourse (Water Body Land) were analyzed for conformance to the Table 8 Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition for all non-agricultural property uses (Table 8 Standards). Samples from the remainder of the site (Community Land) were analyzed for conformance with the Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Table 2 Standards).

A review of the results of the analyses for the soil samples from Borehole 1 (Water Body Land) shows that, with the exception of exceedance for EC and SAR, the tested parameters fall within the Table 8 Standards. Due to laboratory complications, the detection limits exceed the guideline values in some instances. As the results generally indicate non-detectable concentrations slightly above the guideline values, it is the opinion of Soil Engineers Ltd. that these samples are acceptable. However, the testing, as presented, will not be acceptable if a Record of Site Condition (RSC) is sought for the property.

Borehole 1 is adjacent to a roadway (Centennial Drive). If the soils remain in situ, they are considered exempt. However, should the material be displaced, this exemption will no longer apply and the soil must be managed accordingly.

A review of the results of the analyses for the soil samples retrieved at Boreholes 2, 3 and 4 indicates that the tested parameters fall within the Table 2 ICC Standards for fine-textured soil.

A review of the results of the analyses for the groundwater samples (Community Land) indicates that the tested parameters fall within the Table 2 ICC Standards, fine and medium textured soil.

Generally, we find the site suitable for the proposed culvert and no further testing is recommended. However, the culvert test results will not be acceptable as presented. Additional testing would be required for the sole purpose of filing a RSC.

2.0 INTRODUCTION

Soil Engineers Ltd. was authorized by Mr. Dale Dionne of SRM Associates (A Member of the Sernas Group Inc.) to carry out a Phase Two ESA at a property extending northerly from Centennial Drive to north of Brock Street, in the Township of Uxbridge.

The scope of work of this Phase Two ESA investigation was developed based on the findings of our Phase One ESA, which revealed the following areas of potential environmental concern pertaining to the subject site:

- Records indicate that underground storage tanks for gasoline are located within the Phase One Study Area.
- Various waste generators and manufacturers, including a dry cleaner, are located within the Phase One Study Area.
- Spills have occurred within the within the Phase One Study Area including spills of gasoline fuel [redacted] and heating oil [redacted]
- The south portion of the subject property was historically used as a landfill.
- Earth fill of unknown environmental quality is present on the site.

Accordingly, a Phase Two ESA was recommended to assess the soil and groundwater conditions at the subject site with consideration to the above-mentioned potential environmental concerns. The objectives, methodology, analysis and conclusions of the Phase Two ESA are presented herein.

3.0 SITE DESCRIPTION

3.1 Phase Two Property Information

The subject site, as shown on the Site Location Plan, Drawing No. 1, is a narrow strip of property which extends north-to-south along a creek, and is bisected by Brock Street West.

The site is part of the properties with a Property Identification Numbers (PINs) of 26844-0102, 26844-0103 and 26845-0071, as shown on the Property Index Map (Block 26844), Drawing No. 2 and Property Index Map (Block 26845), Drawing No. 3.

The site was formerly Part of Lots 30 and 31 in Concession 6, in the Township of Uxbridge, Regional Municipality of Durham.

PIN 26844-0102 is described in the Parcel Register as PCL UXBRIDGE-PLAN 83-587-3, SEC COUNTY OF ONTARIO; PT LT 587 BLK PPP, MUNICIPAL PL 83 FOR THE TOWNSHIP OF UXBRIDGE, IN THE REGIONAL MUNICIPALITY OF DURHAM, PT 6, 40R1047; T/W PT 7, 40R1047 AS IN UX7136 & C0152974; UXBRIDGE

PIN 26844-0103 is described in the Parcel Register as PT LTS 587 & 588 BLK PPP, PL 83; PT UNNUMBERED LT (AKA PT LT 30 CON 6 UXBRIDGE) , BLK PPP, PL 83, PT 1 40R4868; UXBRIDGE

PIN 26845-0071 is described in the Parcel Register as PT LT 227 BLK CC PL 83 PTS 1,2,4, 40R5680 S/T D88057; S/T 102029; S/T D14796; UXBRIDGE

The site is irregular in shape and encompasses an approximate area of 0.2 ha (0.49 ac). The UTM coordinates for the approximate centroid of the site are 17T 650298m E 4885552m N as obtained from Google Earth which utilizes a 1983 North American Datum. The majority of the site is zoned as General Commercial with the north limits within an Environmental Protected Zone.

3.2 **Property Ownership**

This Phase Two ESA was commissioned to address the environmental concerns identified in our Phase One ESA as approved on April 11, 2012, by Mr. Dale Dionne of SRM Associates (A Member Of The Sernas Group Inc.).

Our client can be contacted at:

Township of Uxbridge
c/o SRM Associates
110 Scotia Court, Unit 41
Whitby, Ontario
L1N 8Y7

Attention: Ms. Jennifer Haslett, B.Sc., EP

The Phase One Property owners can be contacted at:

PIN	Owner
26845-0071	The Corporation of The Township of Uxbridge 51 Toronto Street South Uxbridge, Ontario L9P 1T1
26844-0102	
26844-0103	[redacted]

3.3 Current and Proposed Future Uses

The site is currently used for institutional and commercial purposes. The existing culvert on site is to be upgraded.

3.4 Application of Standards

The subject site is located in a developed institutional/commercial area, and is adjacent to a creek. For discussion purposes in this report, the areas within 30 m of the watercourse are designated "Water Body Land" and the remaining areas are referred to as "Community Land." A plan showing these areas delineated on the site is presented on Drawing No. 4. The soil and groundwater samples were tested in accordance with the criteria for fine textured soil in a potable groundwater condition, as set out in the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), April 15, 2011. Grain size analyses were performed on three samples; the gradations are presented in Appendix 'A', and show the soil is classified as a fine-textured soil.

The analytical results for the samples from the Water Body Land (Borehole 1) were compared to the Table 8 Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition for all non-agricultural property uses. The results for the samples from the Community Land (Boreholes 2, 3 and 4) were compared to the Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for industrial/ commercial/community property uses.

4.0 BACKGROUND

4.1 Physical Setting

Based on the topography of the area, precipitation runoff is expected to flow northeast. A copy of a Topographic Map is presented on Drawing No. 5.

A review of a geological map of the area located at the Geological Survey of Canada website indicates that the subject site is underlain predominantly by coarse textured soils formed on sand and gravel. A copy of the map is presented on Drawing No. 6.

The Township of Uxbridge is situated on Peterborough Drumlin Field, where the lacustrine sand, silt, clay and water-laid till (reworked) in Lake Schomberg (glacial lake) has, in places, modified the drumlinized soil stratigraphy.

Our soil investigation indicated that the site is underlain by a complex stratigraphy consisting of silty sand till and sandy silt till, silty clay till, silt and gravelly sand encountered at various locations and depth throughout the site. According to the MOE Well Record and Ecolog ERIS Report, no bedrock was encountered, and the deepest well noted in the record is 323 ft below the ground surface.

5.0 SCOPE OF INVESTIGATION

5.1 Overview of Site Investigation

The purpose of this investigation is to establish a chemical profile of the current subsurface soil and groundwater conditions at the subject property with regard to the items of concerns identified in our Phase One ESA. This study was conducted in general conformance with the CSA Standard Z769-00 and O. Reg. 153/04, as amended by O. Reg. 511/09 and O. Reg. 269/11.

The Phase Two ESA consisted of drilling four boreholes for combined environmental and geotechnical purposes at the locations shown on the Borehole Location Plan, Drawing No. 7. A groundwater monitoring well was installed in three of the boreholes. Soil and groundwater samples were retrieved, and selected samples were tested for General Metals and Inorganics (M&I), Petroleum Hydrocarbons, F1 to F4 (PHC), Volatile Organic Compounds (VOC), Polychlorinated Biphenyl (PCB) and Base, Neutral and Acid Extractables (BNAE) (soil only). The rationale behind the selection of the borehole locations is detailed in Table 1.

Table 1 - Rationale for Borehole Locations

Borehole No.	Monitoring Well	Location	Rationale	Tests Conducted
1	-	South limit of site	To assess the soil for impact from the landfill in the Phase One Study Area, and to assess the fill material on the site	- M&I - BNAE - PCB - VOC
2	Installed	South-central sector of site	To assess the soil and groundwater for impact from the waste generators and former dry cleaner in the Phase One Study Area	- M&I - PHC - VOC
3	Installed	North-central sector of site	To assess the soil and groundwater for impact from the former gas station at 23 Brock Street and waste generators in the Phase One Study Area; to assess the fill material on the site	- M&I - PHC - VOC
4	Installed	North sector of the subject site	To assess the soil and groundwater for impact from contaminant spills and waste generators in the Phase One Study Area; to asses fill material on the site	- M&I - PHC - VOC

5.2 Media Investigated

The soil and groundwater at the site were analysed for potential contamination. The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, May 1996" as revised December 1996 (MOE Guidance Manual) and as amended by O. Reg. 511/09. Laboratory analytical methods, protocols and procedures were carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties, under Part XV.1 of the Environmental Protection Act, March 9, 2004", in accordance with O. Reg. 153/04, as amended by O. Reg. 511/09.

5.3 Phase One Conceptual Site Plan

The Phase One Conceptual Site Plan identifies areas of potentially contaminating activities that could result in adverse environmental impacts on the soil and groundwater conditions at the subject site, as determined by our Phase One ESA. The Phase One Conceptual Site Plan is presented on Drawing No. 8.

5.4 Deviations

There were no deviations from the sampling and analysis plan.

6.0 INVESTIGATION METHOD

6.1 General

The Phase Two ESA consisted of soil sampling at four borehole locations. Monitoring wells were installed in three boreholes to measure the water level and collect groundwater samples for analysis. The soil and groundwater samples were assessed for potential contamination which may have resulted from the past activities on the subject site, and the presence of waste generators and a contaminating spill documented within the Phase One Study Area. The environmental quality of the earth fill on the site was also assessed.

The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, May 1996", revised December 1996 and O. Reg. 511/09. Laboratory analytical methods, protocols and procedures were carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act".

6.2 Borehole Drilling

The geotechnical/environmental field work, consisting of four boreholes drilled to depths ranging from 12.6 to 20.0 m, was performed on May 7, 8, 14 and 15, 2012, at the locations shown on the Borehole Location Plan, Drawing No. 7.

The boreholes were advanced to soil sampling depths by a truck-mounted power-auger drilling machine equipped for soil sampling, provided and operated by Strong Soil Search Inc. Soil samples were recovered from the boreholes using split spoon sampling equipment for soil classification and visual and olfactory observations.

6.3 Soil Sampling

Prior to recovering a sample, the sampling equipment was brushed clean using a solution of phosphate-free detergent and distilled water, and each discrete sample was handled by the sampler with new disposable gloves in order to avoid the risk of cross-contamination between the samples. Each soil sample was split with part of the sample sealed in a laboratory-prepared glass jar and stored in a cooler with ice, and the remainder of the sample sealed in a double sealable bag for vapour measurement and soil classification. For VOC and PHC samples, a small amount of the soil samples were retrieved by a disposable 'T' shaped Terracore sampler and the soil samples from the Terracore sampler were stored in methanol or sodium bisulfate vials for light PHCs (CCME F1) and VOCs analyses, respectively.

Representative soil samples from each borehole were selected and sent to ALS Laboratories, accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA), for chemical analysis under Part XV.1 of the EPA.

6.4 Groundwater Monitoring

Once the final soil samples had been retrieved from a borehole, a monitoring well was installed in the borehole by Strong Soil Search Inc. In total, three monitoring wells were installed. The wells were constructed with a 50 mm diameter PVC screen, 3.0 m in length. A PVC riser, capped at the top, was installed from the screen section to just below the top grade. A sandpack, consisting of clean silica sand, was placed around the screened zone with a bentonite seal placed above the sandpack. The top of each well was sealed with concrete to approximately 0.15 to 0.3 m below the ground surface. Flush-mount protective well casing, cemented in place, was installed at the surface of each monitoring well. After installation, the wells were purged of 3 well casings or 35 litres of groundwater to allow for the influx of fresh formation water. The purged water was transferred into the sanitary sewer.

Soil Engineers Ltd. surveyed the site on May 7, 8, 14 and 15, 2012, to determine the ground surface elevation at the installed groundwater monitoring wells.

Groundwater monitoring was conducted on May 14, 2012 (MW3 and MW4) and May 15, 2012 (MW2) to determine qualitative and quantitative properties of the groundwater in the area. The groundwater level and water temperature were measured and the wells were purged to ensure potential inclusions from drilling were flushed out of the system.

After purging the monitoring wells on May 10 and 15, 2012, low-density polyethylene tubing and laboratory supplied containers (prepared with preservative for the analysis being conducted) were used to retrieve groundwater samples.

The groundwater samples were placed into a cooler and stored with ice packs until delivery to the laboratory.

The groundwater samples were sent to ALS Laboratories for analyses for PHC, VOC and M&I.

7.0 REVIEW AND EVALUATION

Detailed descriptions of the encountered subsurface conditions are presented on the Borehole Logs, Figures 1, 2, 3 and 4.

The borehole findings have disclosed that beneath a pavement structure consisting of 50 to 100 mm of asphaltic concrete and 200 to 650± mm of granular fill, a layer of earth fill to depths ranging from 4.6± to 6.6± m below pavement surface and, in places, a layer of topsoil, the site is underlain by a complex stratigraphy of dense to very dense silty sand till and sandy silt till, soft to stiff silty clay till, loose to compact silt and very dense gravelly sand encountered at various locations and depths throughout the site with a localized deposit of very loose sandy silt found in Borehole 4 beneath the earth fill.

7.1 Groundwater: Physical Characteristics and Flow Direction

The monitoring wells were installed in three of the boreholes to assess the groundwater conditions based upon the Phase One Conceptual Plan. The groundwater levels and physical characteristics of the groundwater from the monitoring wells on the day of sampling are given in Table 2.

Table 2 - Levels and Physical Characteristics of Groundwater

Monitoring Well No.	Measured Groundwater Level		Temperature	Odour	Colour	Sheen or Free Product
	Depth (m)	Groundwater Elevation (m)				
2	Surface Level	262.90	14.8 °C	None	Clear	None
3	3.19	262.61	11.8 °C	None	Clear	None
4	1.06	264.44	14.8 °C	None	Clear	None

A review of the topography indicates the subject site generally descends towards the north. The water is expected to flow from south to north through the culvert. At Borehole 1, subterranean artesian and artesian groundwater conditions were encountered in the gravelly sand stratum which occurs at a depth of 12.0 m.

7.2 Soil Field Screening and Soil Quality

Based on visual and olfactory observations, representative soil samples from each borehole were selected and sent to the laboratory for chemical analysis. No staining or odours were present at the time of soil sampling. A summary of the soil testing programme is given in Table 3.

Table 3 - Soil Testing Programme

BH No.	Sample ID	Lab ID	Depth (m)	Soil Type	Test Conducted
1	BH 1/3	L1146861-1	1.6 - 2.0	Silty Clay Fill	M&I, BNAE, PCB
	BH 1/5	L1146861-2	3.0 - 3.4	Peat	VOC
2	BH 2/6	L1146861-8	4.6 - 5.0	Sandy Silt Till	
3	BH 3/2	L1146861-4	0.4 - 0.8	Silty Sand Fill	M&I
	BH 3/3	L1152388-1	0.8 - 1.2		
	BH 3/8	L1146861-5	4.6 - 5.0		VOC, PHC
4	BH 4/2	L1146861-6	0.4 - 0.8	Granular Fill	M&I
	BH 4/5	L1146861-7	2.4 - 2.8	Silty Clay Fill	VOC, PHC

A review of the analytical results for the samples from Borehole 1 (Water Body Land) indicates exceedances of the Table 8 Standards, as shown in Table 4.

Table 4 - Exceedances in Soil Samples

Sample ID	BH No.	Depth of Sample (m)	Chemical Parameter	Sample Value	Unit	Table 8 Soil Standard (All other uses except Agricultural)
BH1/3	1	1.5 - 2.0	Conductivity	2.32	mS/cm	0.7
			SAR	10.7	SAR	5

The Certificates of Analysis for the soil samples from Borehole 1 are presented in Appendix 'B'.

It is noted that for two of the samples, the laboratory detection limit for certain parameters exceeded the guideline limit; it is understood from a representative of ALS Laboratories (contacted on August 16, 2012) that this was due to the high moisture content of the soil which diluted the samples. The samples and parameters are listed in Table 5.

Table 5 - List of Soil Samples: Parameter Detection Limit exceed Guideline Limit

Sample ID	BH No.	Depth of Sample (m)	Chemical Parameter	Sample Value	Unit	Table 8 Soil Standard (ICC)
BH1/3	1	1.5 - 2.0	Hexachlorobenzene	<0.10	mg/kg	0.02
			Hexachlorobutadiene	<0.10	mg/kg	0.01
			Hexachloroethane	<0.10	mg/kg	0.01
BH1/5	1	0.7 – 1.1	Acetone	<0.75	ug/g	0.5
			Benzene	<0.030	ug/g	0.02
			Bromodichloromethane	<0.075	ug/g	0.05
			Bromoform	<0.075	ug/g	0.05
			Carbon tetrachloride	<0.075	ug/g	0.05
			Chlorobenzene	<0.075	ug/g	0.05
			Dibromochloromethane	<0.075	ug/g	0.05
			Chloroform	<0.075	ug/g	0.05
			1,2-Dichlorobenzene	<0.075	ug/g	0.05
			1,3-Dichlorobenzene	<0.075	ug/g	0.05
			1,4-Dichlorobenzene	<0.075	ug/g	0.05
			Dichlorodifluoromethane	<0.075	ug/g	0.05
			1,1-Dichloroethane	<0.075	ug/g	0.05
			1,1-Dichloroethylene	<0.075	ug/g	0.05
			Cis-1,2-Dichloroethylene	<0.075	ug/g	0.05
			Trans-1,2-Dichloroethylene	<0.075	ug/g	0.05
			Methylene Chloride	<0.075	ug/g	0.05
			1,2-Dichloropropane	<0.075	ug/g	0.05
			Ethyl Benzene	<0.075	ug/g	0.05
			n-Hexane	<0.075	ug/g	0.05
			Methyl Ethyl Ketone	<0.075	ug/g	0.05
			Methyl Isobutyl Ketone	<0.075	ug/g	0.05
			MTBE	<0.075	ug/g	0.05
			Styrene	<0.075	ug/g	0.05
			1,1,1,2-Tetrachloroethane	<0.075	ug/g	0.05
			Tetrachloroethylene	<0.075	ug/g	0.05
			Toluene	<0.30	ug/g	0.2
			Trichloroethylene	<0.075	ug/g	0.05
			Vinyl chloride	<0.030	ug/g	0.02
			Xylenes (Total)	<0.054	ug/g	0.05

[redacted]

Table 6 - Exceedance in Soil Sample

Sample ID	BH No.	Depth of Sample (m)	Chemical Parameter	Sample Value	Unit	Table 8 Soil Standard (ICC)
[redacted]						

[redacted]

The Certificates of Analysis for the soil samples retrieved at the Community Land are presented in Appendix 'C'.

7.3 Groundwater Quality

A summary of the groundwater testing programme is given in Table 7.

Table 7 - Groundwater Testing Programme

MW No.	Sample ID	Lab ID	Test Conducted
2	MW2	L1146861-11	M&I, PHC and VOC
3	MW3	L1146861-10	M&I, PHC and VOC
4	MW4	L1146861-9	M&I, PHC and VOC

The monitoring wells are located on the Community Land. A review of the results of the analyses for the groundwater indicates that the tested parameters fall within the Table 2 Standards.

The Certificates of Analysis for the groundwater samples are presented in Appendix 'C'.

7.4 QA/QC Results

QA/QC Soil Samples

A field duplicate for a selected soil sample was submitted for analyses for VOC in accordance with the EPA criteria. The soil testing programme given in Table 8.

Table 8 - QA/QC Soil Testing Programme

Original Sample ID	Sample ID	Lab ID	Depth (m)	Soil Type	Test Conducted
BH 1/5	DUP	L1146861-3	3.0 - 3.4	Peat	VOC

The results of the analysis for the duplicate samples are similar to those for the original sample.

The Certificate of Analysis for the duplicate soil sample is included in Appendix 'B'.

Groundwater Sample

A field duplicate for a selected groundwater sample was submitted for analysis for VOCs in accordance with the EPA criteria. The testing programme is given in Table 9.

Table 9 - QA/QC Groundwater Testing Programme

Original Sample ID	Sample ID	Lab ID	Test Conducted
MW2	DUP2	L1146861-12	VOCs

A review of the results of the analysis for the QA/QC groundwater sample shows that the tested parameters yielded similar results to the test samples.

The Certificate of Analysis for the duplicate groundwater sample is included in Appendix 'C'.

8.0 SUMMARY

Based on our Phase One ESA, Reference No. 1204-S048E dated August 10, 2012, conducted for the subject site, the following environmental concerns attendant to the subject property was investigated further.

- Records indicate that underground storage tanks for gasoline are located within the Phase One Study Area.
- Various waste generators and manufacturers, including a dry cleaner, are located within the Phase One Study Area.
- Spills have occurred within the within the Phase One Study Area including a spill of gasoline fuel [redacted] and heating oil [redacted]
- The south portion of the subject property was historically used as a landfill.

In order to determine the environmental liability associated with the subject site as a result of the above-mentioned concern, a Phase Two ESA was conducted to establish a chemical profile of the current soil and groundwater conditions for the existing commercial property. Our Phase Two ESA has formulated a baseline study which illustrates the current conditions of the soil and groundwater as based on our Phase One ESA.

A review of the results of the analyses for general environmental contaminants in the soil samples from Boreholes 2, 3, and 4 (Community Land) indicates that the tested parameters fall within the Table 2 Standards for ICC property uses.

A review of the results of the analyses for the soil samples from Borehole 1 (Water Body Land) shows that, with the exception of exceedance for EC and SAR, the tested parameters fall within the Table 8 Standards for all non-agricultural properties uses. Due to laboratory complications, the detection limits exceed the guideline values in some instances. As the results generally indicate non-detectable concentrations slightly above the guideline values, it is the opinion of Soil Engineers Ltd. that these samples are acceptable. However, the testing as presented, will not be acceptable if an RSC is sought for the property.

Borehole 1 is adjacent to a roadway (Centennial Drive). Roadways are generally a concern due to the deicing chemicals used during the winter seasons. Therefore, one can expect unusually high levels of SAR and EC adjacent to the roadway. If the soils remain in situ, they are considered exempt in accordance with clause 48(3) of O. Reg. 153/04. However, should the material be displaced, this exemption will no longer apply and the soil must be managed accordingly. Hence, until displacement occurs, this does not constitute a Potentially Contaminating Activity (PCA).

A review of the results of the analyses for the groundwater samples from BH 2, 3 and 4 (Community Land) shows that the results are below the reportable detection limit or within in the Table 2, Full Depth Generic Site Condition Standard for Use in a Potable Groundwater Condition, fine textured soil, for all types of property use.

Generally, we find the site suitable for the proposed culvert and no further testing is recommended. However, the culvert test results will not be acceptable as presented; additional testing would be required for the sole purpose of filing an RSC.

SOIL ENGINEERS LTD.

per. Tharshan Kamaleswaran, Environmental Compliance Consultant

Ian Chiu, P.Eng., QPESA

TK/IC:hs

9.0 REFERENCES

Information in the Public Domain

Environmental Protection Act (EPA). Part VII of Ontario Regulation 511/09. The Ontario Ministry of the Environment (MOE). (Amended 2009)

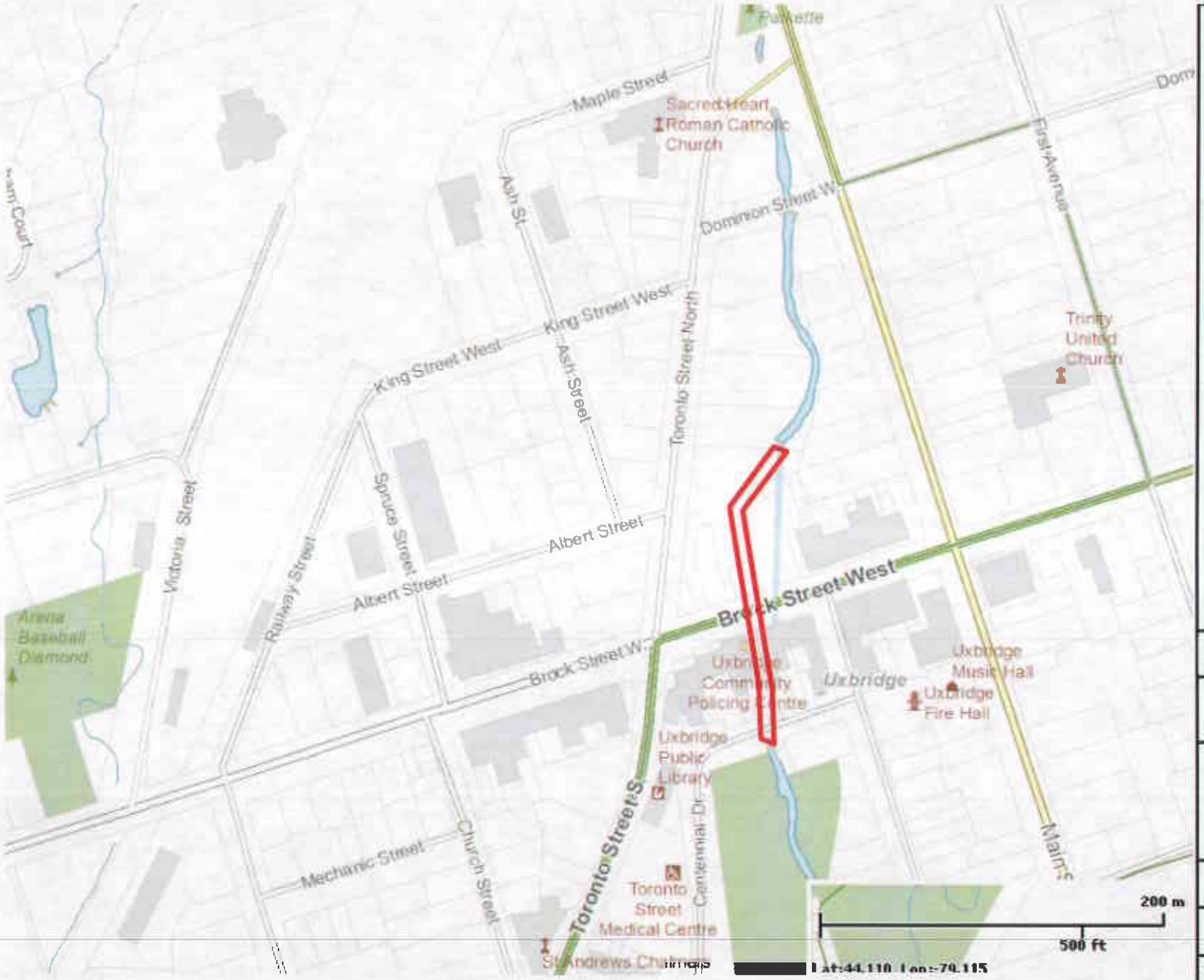
MOE Guidance Manual (MOE). "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, May 1996" revised December 1996. Ontario Ministry of the Environment (MOE). (1996)

Ontario Ministry of the Environment (MOE). "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), March 9, 2004.

References of Plans and Drawings

Durham Region. Interactive Mapping Website (2011)

The Ontario Ministry of Government Services. Property Index Map (Block 26844 and 26845) (2001).



Source: http://www.durham.ca/

Approximate Location of Subject Site

Soil Engineers Ltd.

Title
Site Location Plan

Project
Proposed Culvert Replacement
Centennial Drive To North Of Brock Street
The Township Of Uxbridge

Reference No.
1204-S048E

Date
June 15, 2012

Scale
Refer to Drawing

Drawing No.
1

MINISTRY OF CONSUMER AND COMMERCIAL RELATIONS
ONTARIO

THIS INDEX MAP SHOWS ALL PROPERTIES EXISTING IN BLOCK 26844 - SHEET 2 ON JULY 1, 2001

SCALE

PROPERTY INDEX MAP
BLOCK 26844
TOWNSHIP OF UXBRIDGE
REG. MUNICIPALITY OF DURHAM
(OFFICE 40)

LEGEND

NOTES

Source: Region of Durham LRO

Approximate Location of Subject Site

Soil Engineers Ltd.

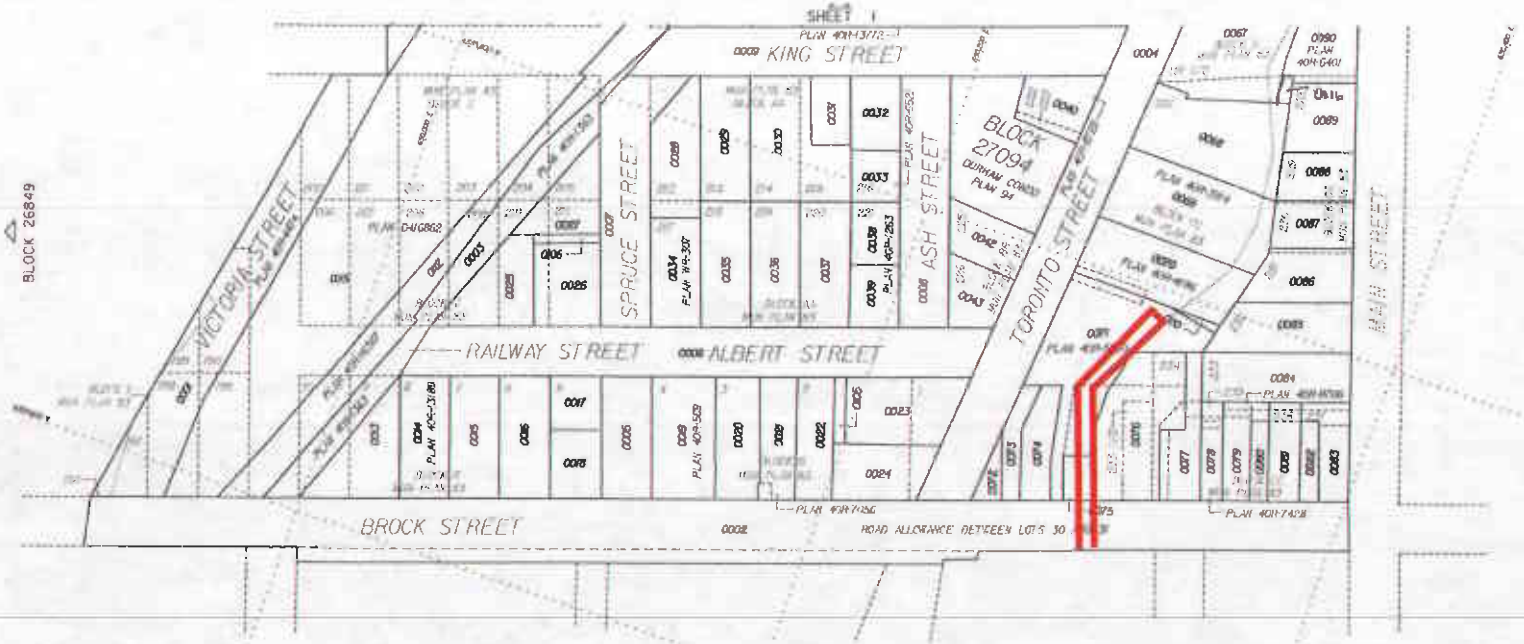
Title	Property Index Map (Block 26844)
Project	Proposed Culvert Replacement Centennial Drive To North Of Brock Street The Township Of Uxbridge
Reference No.	1204-S048E
Date	June 15, 2012
Scale	Refer to Drawing
Drawing No.	2

MINISTRY OF CONSUMER AND COMMERCIAL RELATIONS
ONTARIO

THIS INDEX MAP SHOWS ALL PROPERTIES EXISTING IN BLOCK 26845 - SHEET 2 ON JULY 1, 1999

SCALE

PROPERTY INDEX MAP
BLOCK 26845
TOWNSHIP OF UXBRIDGE
REG. MUNICIPALITY OF DURHAM
(OFFICE 40)

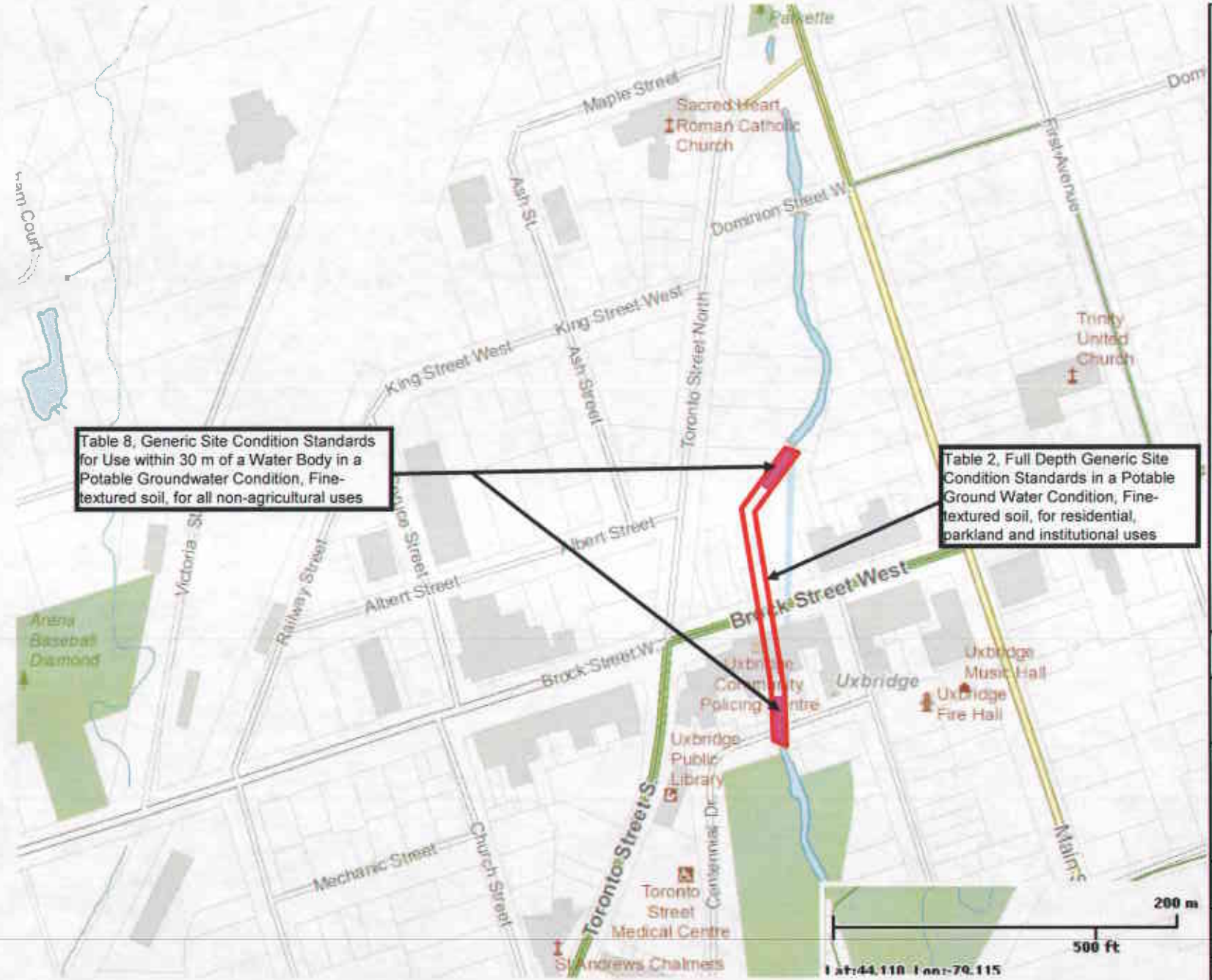


Source: Region of Durham LRO

Approximate Location of Subject Site

Soil Engineers Ltd.

Title	Property Index Map (Block 26845)
Project	Proposed Culvert Replacement Centennial Drive To North Of Brock Street The Township Of Uxbridge
Reference No.	1204-S048E
Date	June 15, 2012
Scale	Refer to Drawing
Drawing No.	3

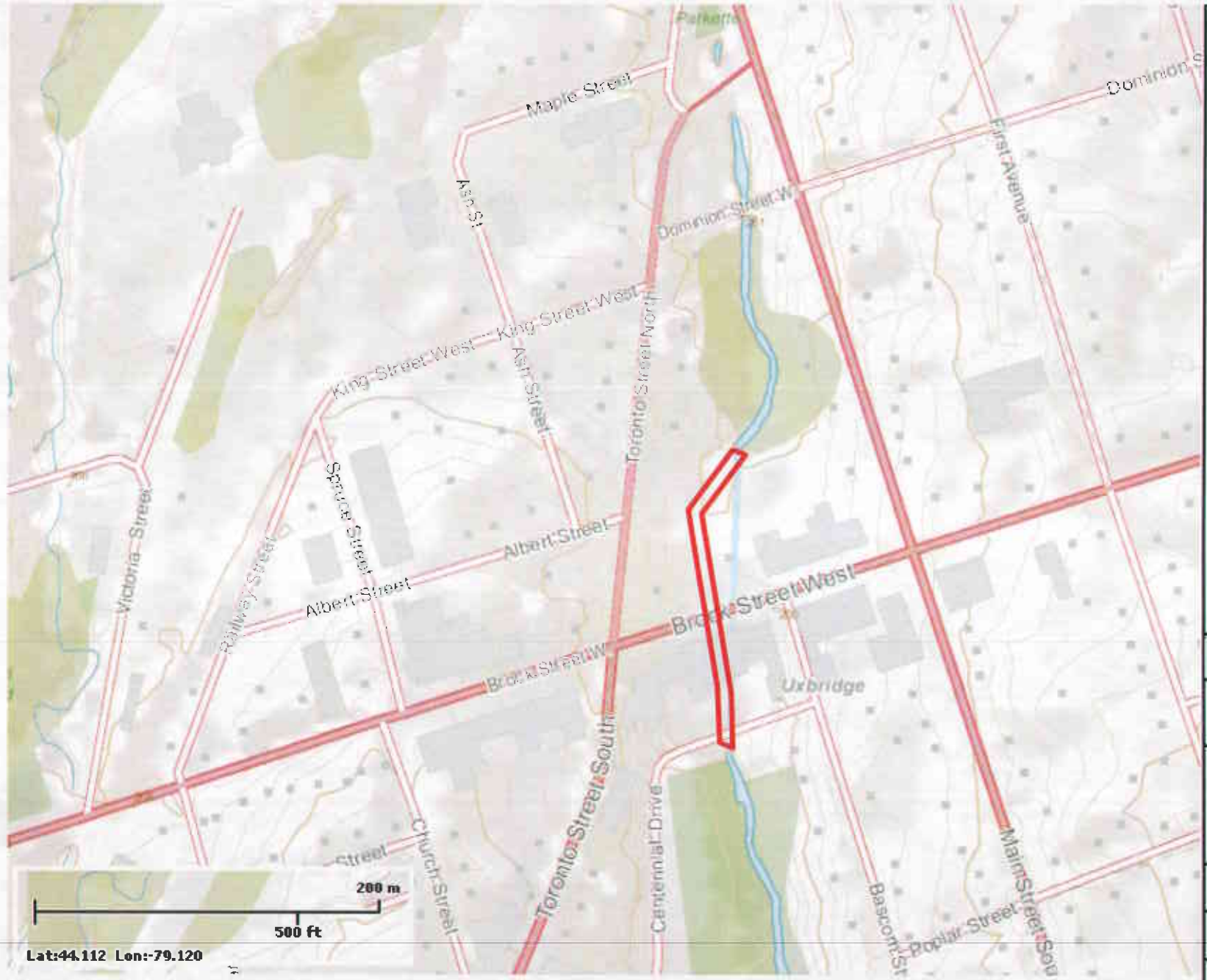


Source: http://www.durham.ca/

Approximate Location of Subject Site

Soil Engineers Ltd.

Title	Site Plan for Site Condition Standards
Project	Proposed Culvert Replacement Centennial Drive To North Of Brock Street The Township Of Uxbridge
Reference No.	1204-S048E
Date	June 15, 2012
Scale	Refer to Drawing
Drawing No.	4

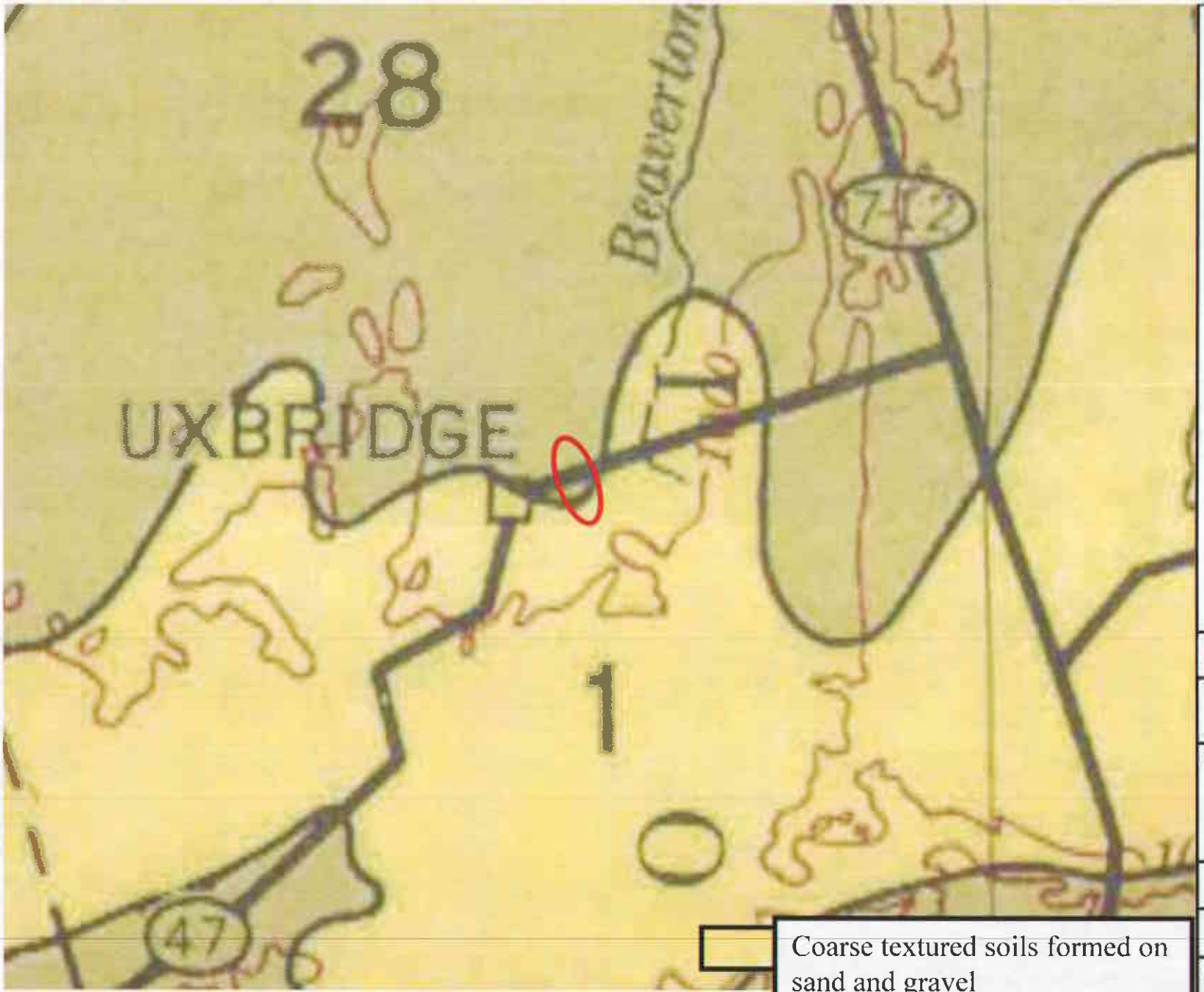


Source: http://www.durham.ca/

Approximate Location of Subject Site

Soil Engineers Ltd.

Title	2008 Topographical Map
Project	Proposed Culvert Replacement Centennial Drive To North Of Brock Street The Township Of Uxbridge
Reference No.	1204-S048E
Date	June 15, 2012
Scale	Refer to Drawing
Drawing No.	5



Coarse textured soils formed on sand and gravel

Approximate Location of Subject Site

Source: The Geological Survey of Ontario

Soil Engineers Ltd.

Title
Geologic Map

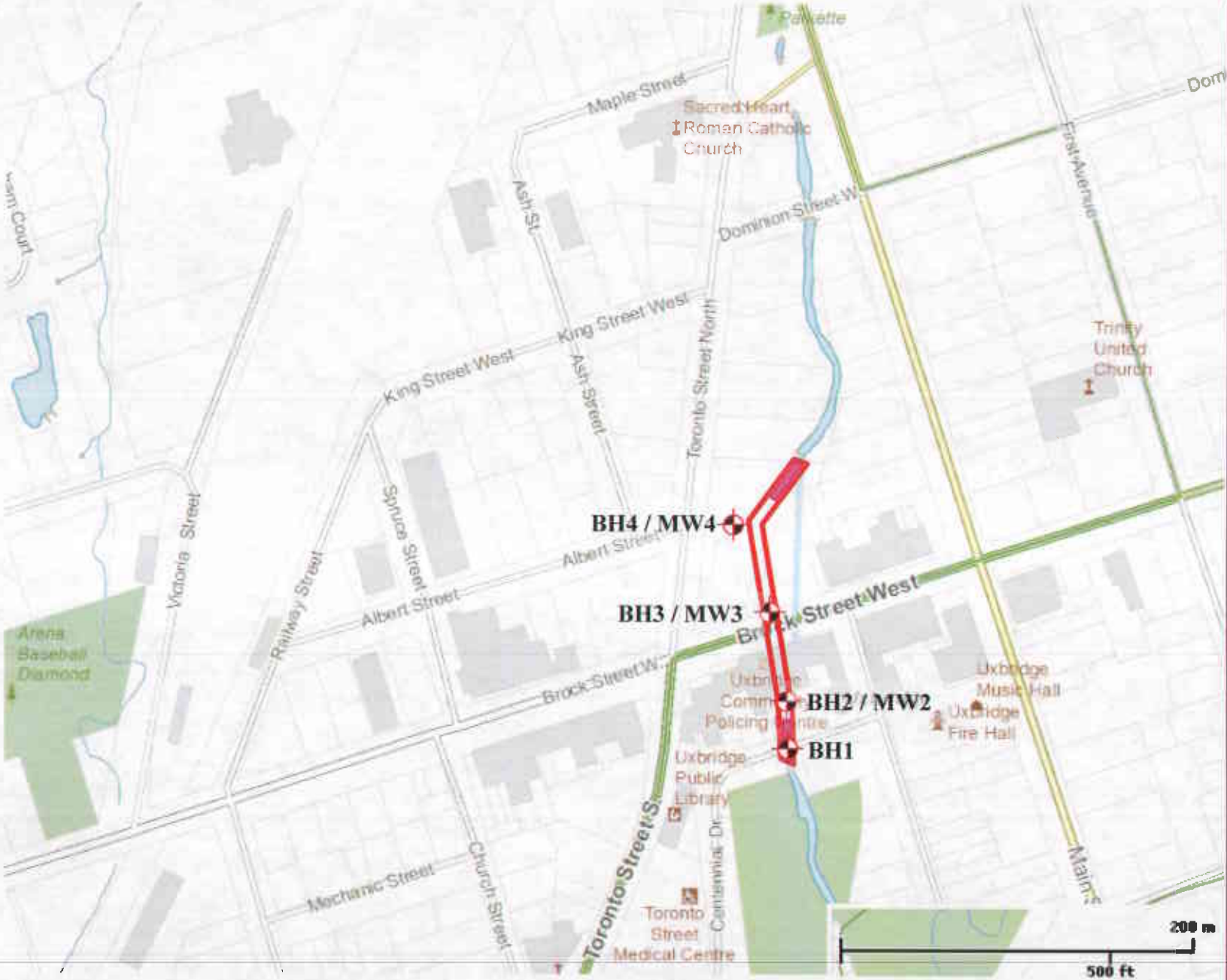
Project
Proposed Culvert Replacement
Centennial Drive To North Of Brock Street
The Township Of Uxbridge

Reference No.
1204-S048E

Date
June 15, 2012

Scale
NTS

Drawing No.
6



Approximate Location of Subject Site

Area for Table 8 Standard

Source: http://www.durham.ca/

Soil Engineers Ltd.

Title
Borehole Location Plan

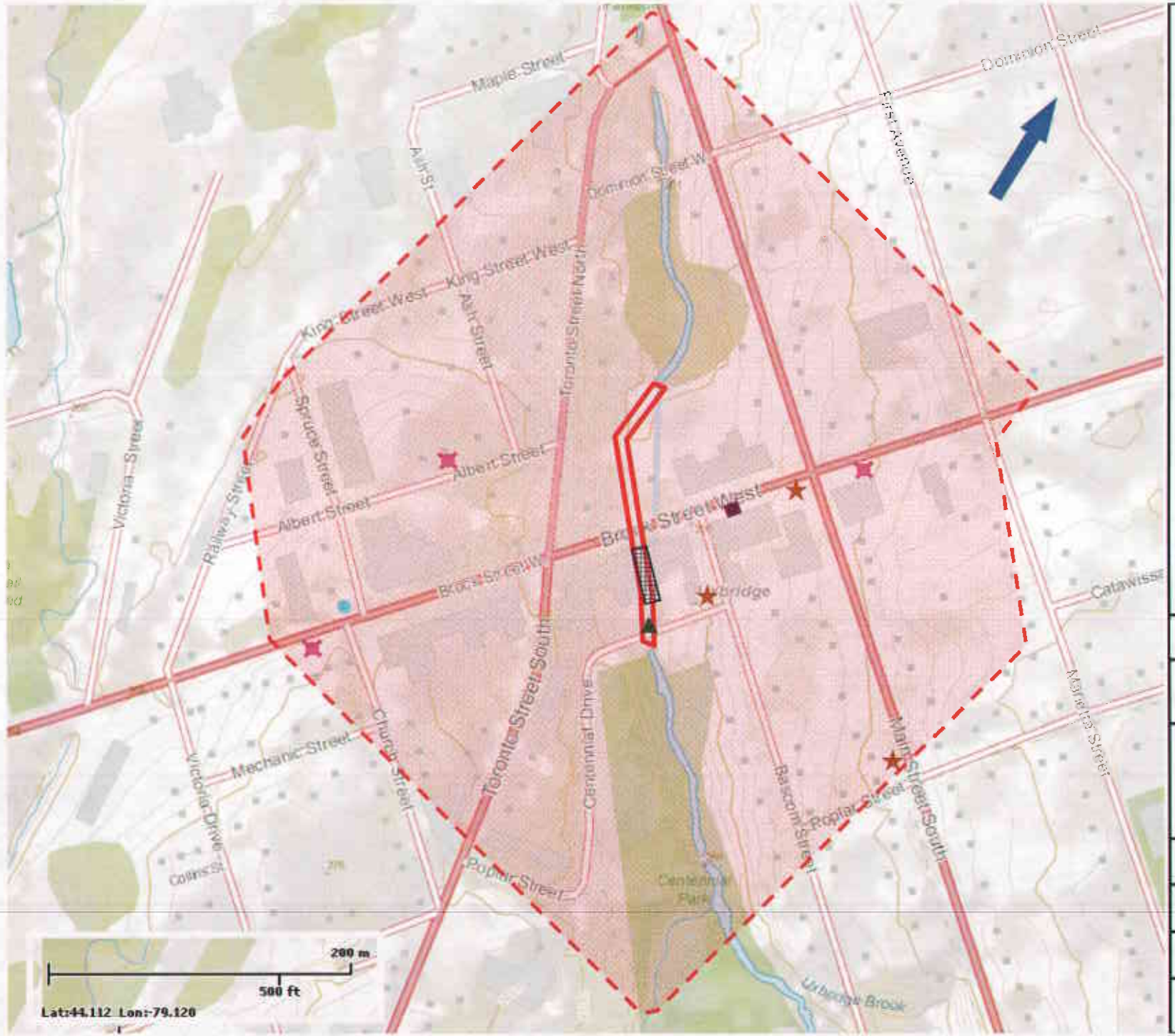
Project
Proposed Culvert Replacement
Centennial Drive To North Of Brock Street
The Township Of Uxbridge

Reference No.
1204-S048E

Date
June 15, 2012

Scale
Refer to Drawing

Drawing No.
7



Legend

- On-Site Establishments
- Flow of Groundwater
- Subject Site Location
- Phase One Study Area
- Dry Cleaners
- Former Landfill Site
- Fuel Storage Tank
- Industrial
- Spills

Soil Engineers Ltd.

Title
Phase One Conceptual Site Plan

Project
Proposed Culvert Replacement
Centennial Drive To North Of Brock Street
The Township Of Uxbridge

Reference No.
1204-S048E

Date
June 15, 2012

Scale
Refer to Drawing

Drawing No.
8

LIST OF ABBREVIATIONS AND DESCRIPTION OF TERMS

The abbreviations and terms commonly employed on the borehole logs and figures, and in the text of the report are as follows:

1. SAMPLE TYPES

AS	Auger sample
CS	Chunk sample
DO	Drive open
DS	Denison type sample
FS	Foil sample
RC	Rock core with size and percentage of recovery
ST	Slotted tube
TO	Thin-walled, open
TP	Thin-walled, piston
WS	Wash Sample

2. PENETRATION RESISTANCE/'N'

Dynamic Cone Penetration Resistance:

A continuous profile showing the number of blows for each foot of penetration of a 2-inch diameter 90° point cone driven by a 140-pound hammer falling 30 inches.
Plotted as _____

Standard Penetration Resistance or 'N' value:

The number of blows of a 140-pound hammer falling 30 inches required to advance a 2-inch O.D. drive open sampler one foot into undisturbed soil.
Plotted as 'O'

WH	Sampler advanced by static weight
PH	Sampler advanced by hydraulic pressure
PM	Sampler advanced by manual pressure
NP	No penetration

3. SOIL DESCRIPTION

a) Cohesionless Soils:

'N' (Blows/ft)	Relative Density
0 to 4	very loose
4 to 10	loose
10 to 30	compact
30 to 50	dense
over 50	very dense

b) Cohesive Soils:

Undrained Shear Strength (ksf)	'N' (Blows/ft)	Consistency
Less than 0.25	0 to 2	very soft
0.25 to 0.50	2 to 4	soft
0.50 to 1.0	4 to 8	firm
1.0 to 2.0	8 to 16	stiff
2.0 to 4.0	16 to 32	very stiff
over 4.0	over 32	hard

c) Method of Determination of Undrained Shear Strength of Cohesive Soils:

x 0.0 - Field vane test in borehole
The number denotes the sensitivity to remoulding.

△ - Laboratory vane test

□ - Compression test in laboratory

For a saturated cohesive soil, the undrained shear strength is taken as one half of the undrained compressive strength.

METRIC CONVERSION FACTORS

1 ft. = 0.3048 metres
1 lb. = 0.453 kg
1 inch = 25.4 mm
1 ksf = 47.88 kN/m^2

Soil Engineers Ltd.
CONSULTING SOIL, FOUNDATION & ENVIRONMENTAL ENGINEERS
100 NUGGET AVENUE, SCARBOROUGH, ONTARIO M1S 3A7 TEL: (416) 754-8515 FAX: (416) 754-8516

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 1

FIGURE NO: 1A

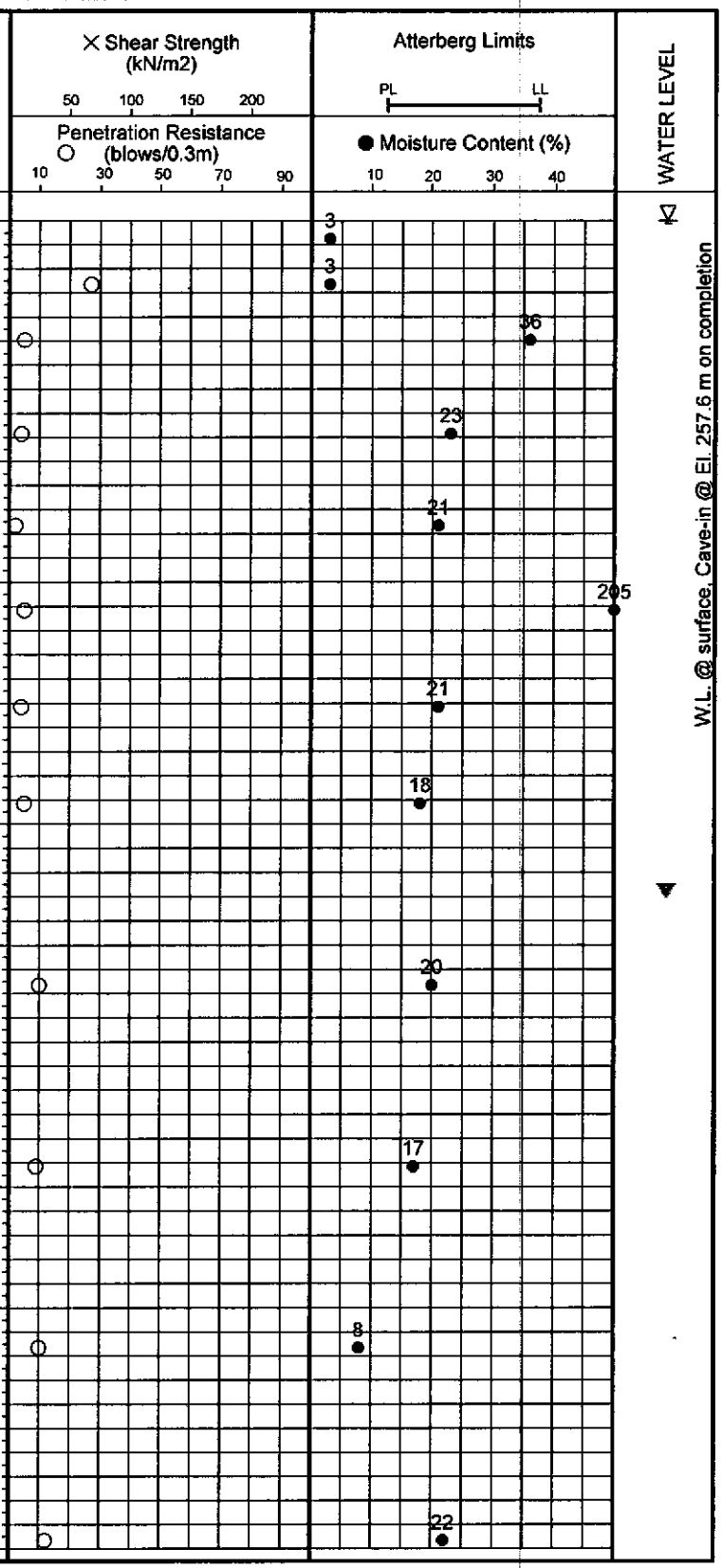
JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 14, 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)
0.0	Pavement Surface			
263.1	**50 mm ASPHALTIC CONCRETE** **610 mm GRANULAR, FIll**	1A	AS	
		1B	DO	
	Brown **SILTY CLAY, FIll and SILTY SAND, FIll** a trace of gravel occ. cobbles and boulders with organic material	2	DO	
		3	DO	
		4	DO	
2.9				
260.2	Black **PEAT**	5	DO	
3.7				
259.4	Grey, very loose **GRAVELLY SAND**	6	DO	
4.4				
258.7	Grey, very loose **SILT** a trace to some clay a trace of fine sand occ. wet sand seams and layers	7	DO	
		8	DO	
7.0				
256.1	Grey, stiff **SILTY CLAY, TIll** traces of sand and gravel occ. wet sand and silt seams and layers, cobbles and boulders	9	DO	
		10	DO	
10.1				
253.0	*(Cont'd on next Fig.)*	11	DO	



Soil Engineers Ltd.

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 1

FIGURE NO: 1B

JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 14, 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)
11.0				
	Grey, compact **SILT** traces of clay and fine sand occ. wet sand seams and layers *(continued)*			
12.0 / 251.1				
	Grey, dense **GRAVELLY SAND** some silt	12	DO	
12.7 / 250.4	**END OF BOREHOLE**			

Depth Scale (m): 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22

× Shear Strength (kN/m2): 50, 100, 150, 200

Penetration Resistance ○ (blows/0.3m): 10, 30, 50, 70, 90

Atterberg Limits: PL — LL

● Moisture Content (%): 10, 20, 30, 40

8

WATER LEVEL

W.L. @ surface, Cave-in @ El. 257.6 m on completion

Soil Engineers Ltd.

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 2

FIGURE NO: 2A

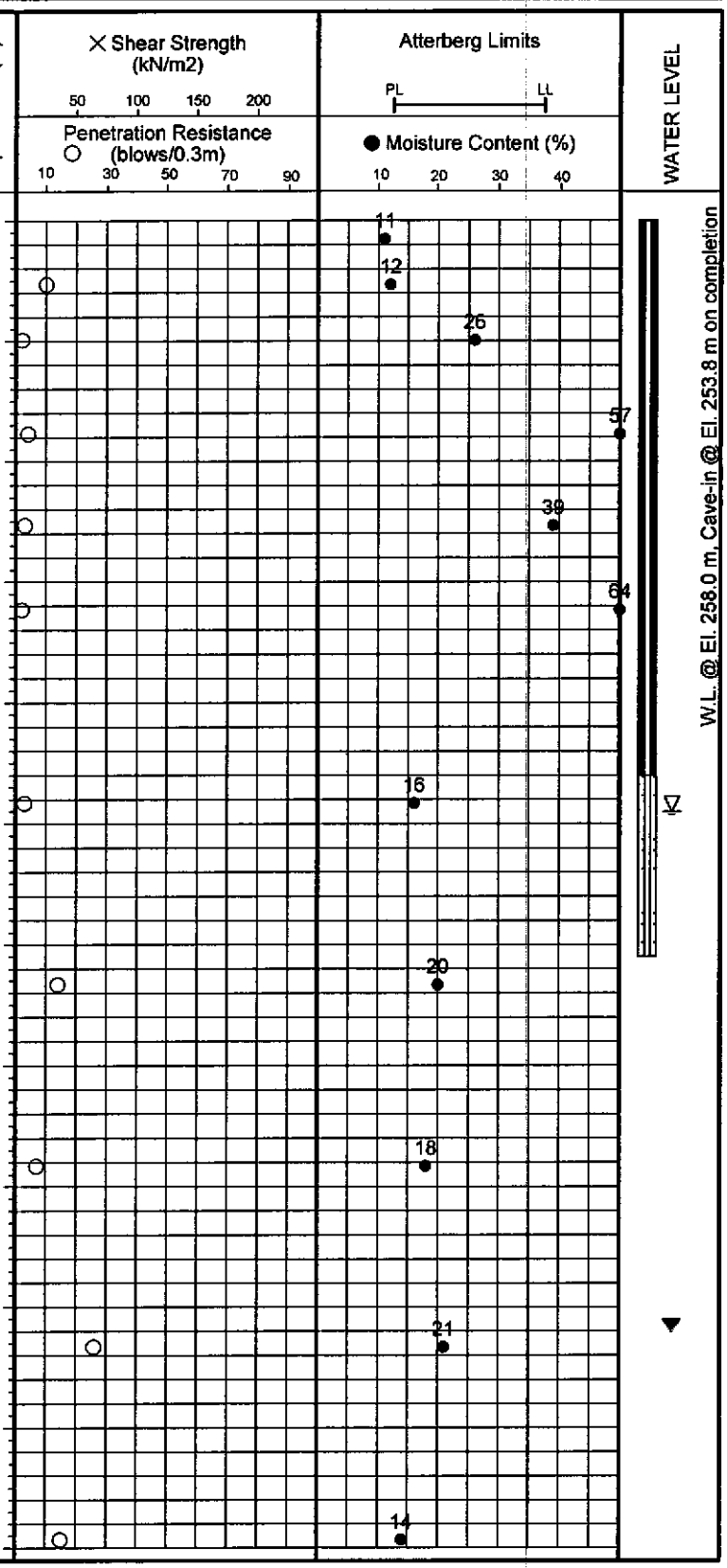
JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 14, 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)
0.0	Pavement Surface			
262.9	**50 mm ASPHALTIC CONCRETE** **300 mm GRANULAR, FIII**	1A	AS	
	Brown **SILTY SAND, FIII** a trace of gravel occ. cobbles and boulders with organic material	1B	DO	
		2	DO	
1.5				
261.4	**TOPSOIL**	3	DO	
	dark brown grey	4	DO	
		5	DO	
4.0				
258.9	Grey, very loose **SANDY SILT, Till** a trace to some clay a trace of gravel occ. wet sand and silt seams and layers, cobbles and boulders	6	DO	
5.5				
257.4	Grey, loose to compact **SILT** some clay occ. wet sand seams and layers	7	DO	
		8	DO	
		9	DO	
10.1				
252.8	*(Cont'd on next Fig.)*	10	DO	



Soil Engineers Ltd.

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 2

FIGURE NO: 2B

JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 14, 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)
11.0				
	Grey, compact to very dense **SILTY SAND, TIII** a trace of clay a trace to some gravel occ. wet sand and silt seams and layers, cobbles and boulders *(continued)*	11	DO	
12.6 250.3	**END OF BOREHOLE** Installed 50 mm Ø monitoring well to 6.1 m (1.5 m screen) Sand backfill from 4.6 m to 6.1 m Bentonite holeplug from 0.0 m to 4.0 m Provided with top and bottom caps			

Depth Scale (m): 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22

× Shear Strength (kN/m2): 50 100 150 200

Penetration Resistance ○ (blows/0.3m): 10 30 50 70 90

Atterberg Limits: PL — LL

● Moisture Content (%): 10 20 30 40

15

WATER LEVEL

W.L. @ El. 258.0 m, Cave-in @ El. 253.8 m on completion

Soil Engineers Ltd.

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 3

FIGURE NO: 3A

JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 7, 2012

Depth / Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)
0.0 / 265.8	Pavement Surface **100 mm ASPHALTIC CONCRETE** **200 mm GRANULAR, Fill**	1	AS	
	Brown **SILTY SAND, Fill and SAND, Fill** a trace of gravel occ. cobbles and boulders with organic material, wood and rock inclusions pieces of rock	2	DO	
		3	DO	
		4	DO	
		5	DO	
		6	DO	
3.6 / 262.2	Grey **FINE TO COARSE SAND, FIII** a trace to some sand a trace of gravel occ. cobbles and boulders	7	DO	
4.4 / 261.4	Grey **SILTY SAND, Fill and SANDY SILT, FIII** a trace of gravel occ. cobbles and boulders with wood inclusions and brick fragments wood pieces brick fragments	8	DO	
		9	DO	
		10	DO	
6.6 / 259.2	Grey, compact **SILT** a trace to some fine sand occ. gravel, clay seams and layers and cobbles clay layers	11	DO	
		12	DO	
10.1 / 255.7	*(Cont'd on next Fig.)*	13	DO	

Depth Scale (m): 0 1 2 3 4 5 6 7 8 9 10 11

× Shear Strength (kN/m2): 50 100 150 200

○ Penetration Resistance (blows/0.3m): 10 30 50 70 90

Atterberg Limits: PL — LL

● Moisture Content (%): 10 20 30 40

Moisture Content (%): 3, 7, 4, 5, 4, 5, 22, 20, 61, 19, 16, 20, 13

WATER LEVEL

W.L. @ El. 262.1 m on completion

Soil Engineers Ltd.

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 3

FIGURE NO: 3B

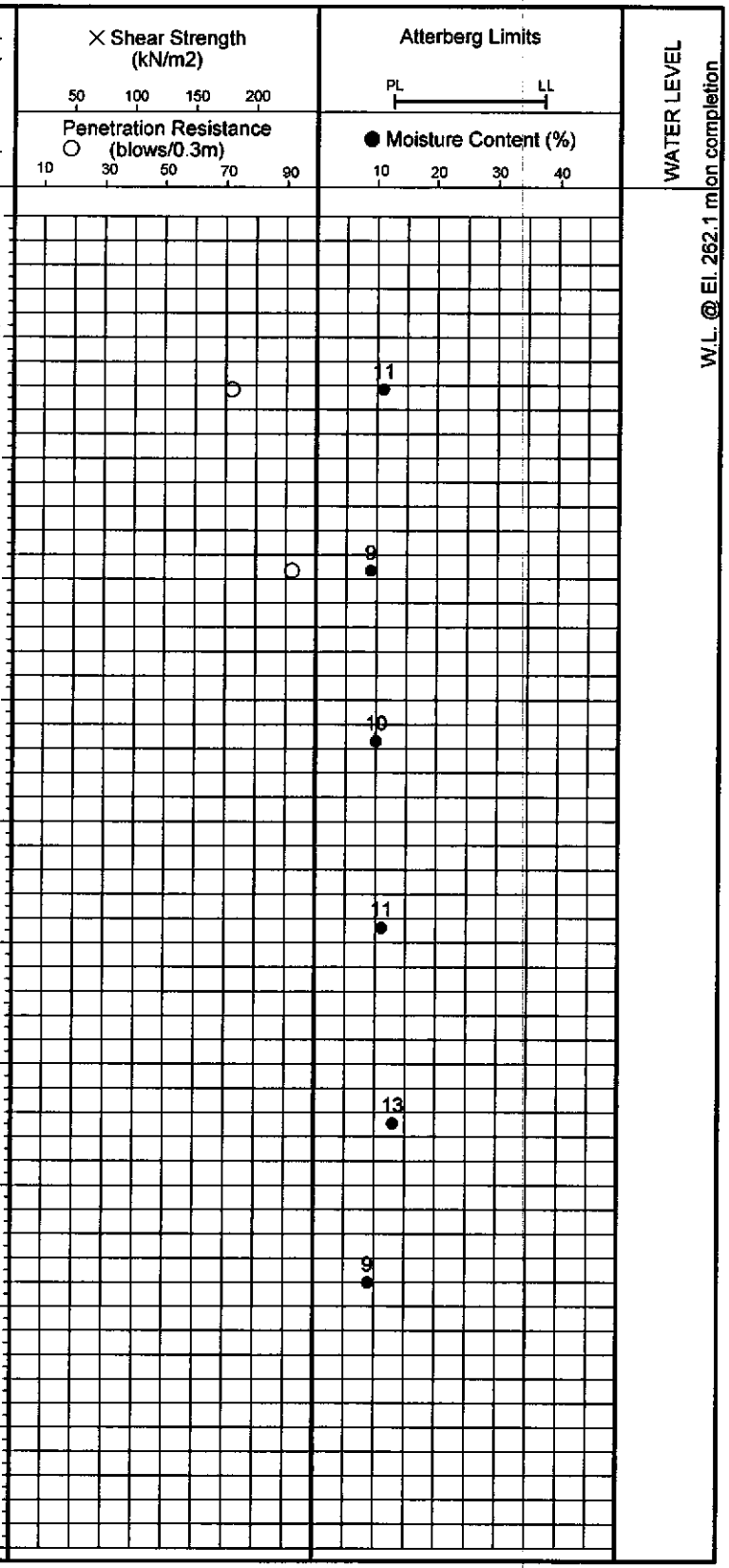
JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 7, 2012

Depth / Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)
11.0				
	Grey, stiff layers **SILTY CLAY, Till** some sand, a trace of gravel occ. wet sand and silt seams and layers, cobbles and boulders			
12.0 253.8	*(continued)*	14	DO	
	Grey, very dense **SILTY SAND, Till and SANDY SILT, Till** a trace of gravel occ. wet sand and silt seams and layers, cobbles and boulders	15	DO	
14.6 251.2	Grey, very dense **SILTY SAND, Till** some gravel to gravelly a trace of clay occ. wet sand and silt seams and layers, cobbles and boulders	16	DO	
		17	DO	
17.7 248.1	Grey, very dense **SANDY SILT, Till** a trace of gravel occ. wet sand and silt seams and layers, cobbles and boulders	18	DO	
19.4 246.4	Grey, very dense **GRAVELLY SAND** a trace to some silt			
20.0 245.8	occ. cobbles and boulders **END OF BOREHOLE**	19	DO	
	Installed 50 mm Ø monitoring well to 6.1 m (1.5 m screen) Sand backfill from 4.0 m to 6.1 m Bentonite holeplug from 0.0 m to 4.0 m Provided with top and bottom caps			



Soil Engineers Ltd.

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 4

FIGURE NO: 4A

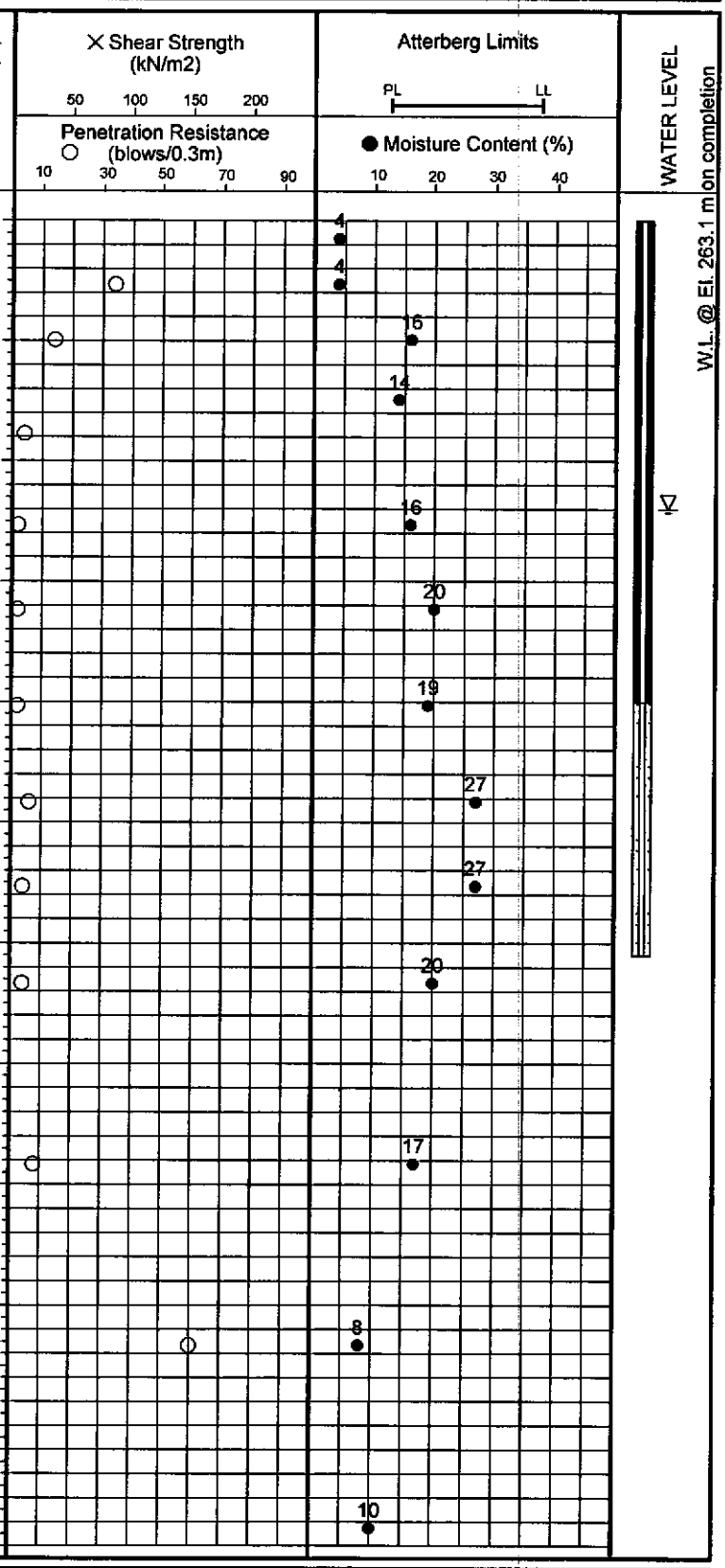
JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 8, 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)
0.0	Pavement Surface			
265.5	**100 mm ASPHALTIC CONCRETE**	1	DO	
	650 mm GRANULAR, Fill	2	DO	
		3	DO	
	SILTY CLAY, Fill brown grey			
		4	AS/DO	
	a trace to some sand a trace of gravel occ. sand seams with organic material and root inclusions			
		5	DO	
3.2				
262.3	Grey organic materials	6	DO	
	SILTY SAND, Fill and SANDY SILT, Fill traces of clay and gravel with organic material and root inclusions	7	DO	
4.4				
261.1	Grey **SILTY CLAY, Fill** some sand to sandy a trace of gravel	8	DO	
5.3				
260.2	**TOPSOIL**	9	DO	
	Grey, very loose, weathered **SILTY FINE SAND** a trace to some clay occ. sand seams and layers			
6.0 259.5				
	Grey, loose to very dense	10	DO	
	SILTY SAND, Till and SANDY SILT, Till			
	weathered			
	a trace to some gravel a trace of clay occ. wet sand and silt seams and layers, cobbles and boulders	11	DO	
		12	DO	
		13	DO	



Soil Engineers Ltd.

JOB NO: 1204-S048

LOG OF BOREHOLE NO: 4

FIGURE NO: 4B

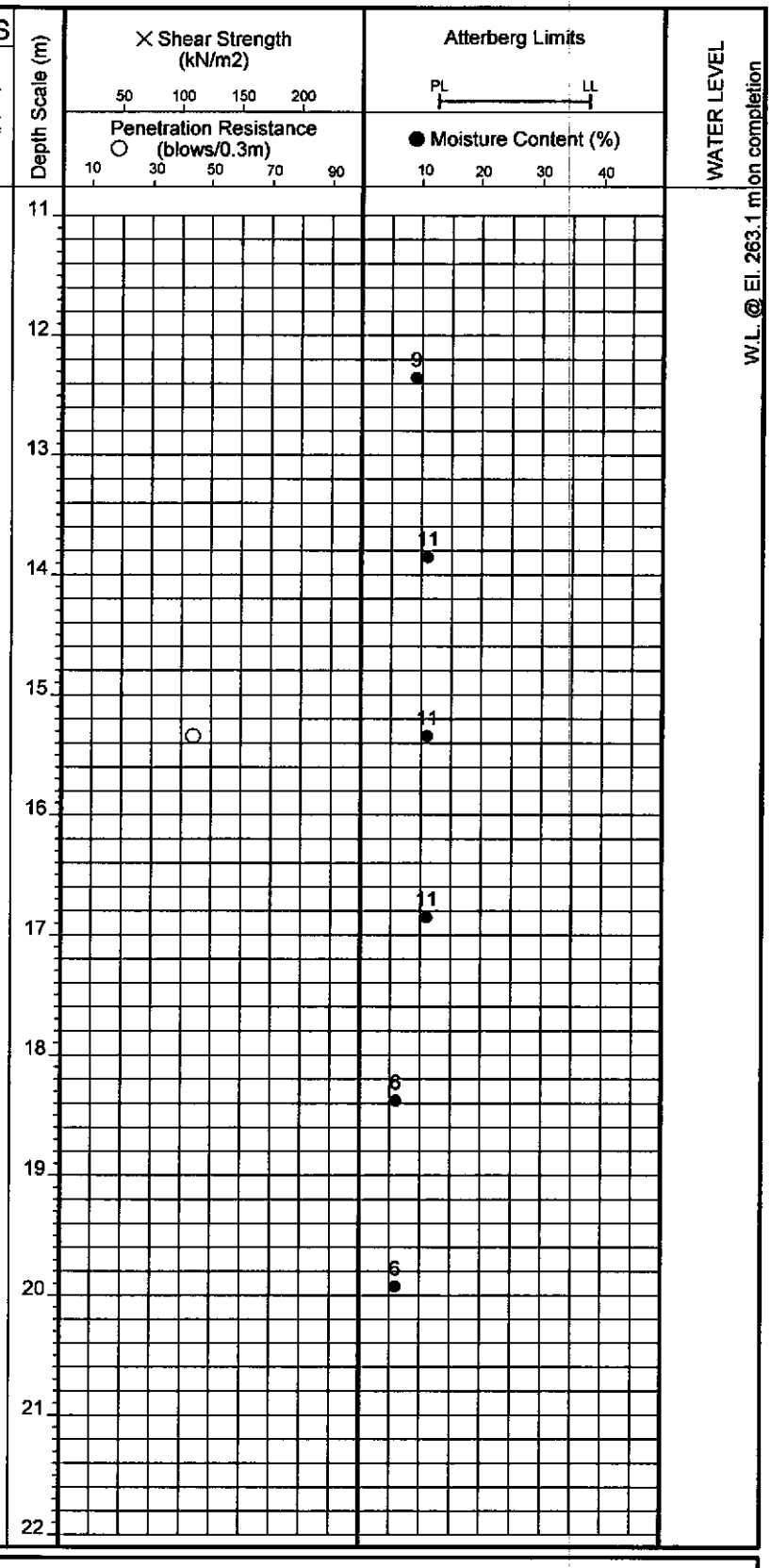
JOB DESCRIPTION: Proposed Culvert Replacement

JOB LOCATION: Centennial Drive to north of Brock Street
Town of Uxbridge

METHOD OF BORING: Flight-Auger

DATE: May 8, 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)
11.0				
12.0				
253.5	Grey, loose to very dense **SILTY SAND, Till and SANDY SILT, Till** a trace to some gravel a trace of clay occ. wet sand and silt seams and layers, cobbles and boulders	14	DO	
13.0 252.5	Grey, dense to very dense **SILTY SAND, Till** some gravel occ. wet sand and silt seams and layers, cobbles and boulders	15	DO	
		16	DO	
16.2 249.3	Grey, very dense **GRAVELLY SAND** a trace to some silt occ. cobbles and boulders	17	DO	
		18	DO	
20.0 245.5	**END OF BOREHOLE** Installed 50 mm Ø monitoring well to 6.1 m (1.5 m screen) Sand backfill from 4.0 m to 6.1 m Bentonite holeplug from 0.0 m to 4.0 m Provided with top and bottom caps	19	DO	



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FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (416) 754-8516	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

APPENDIX 'A'

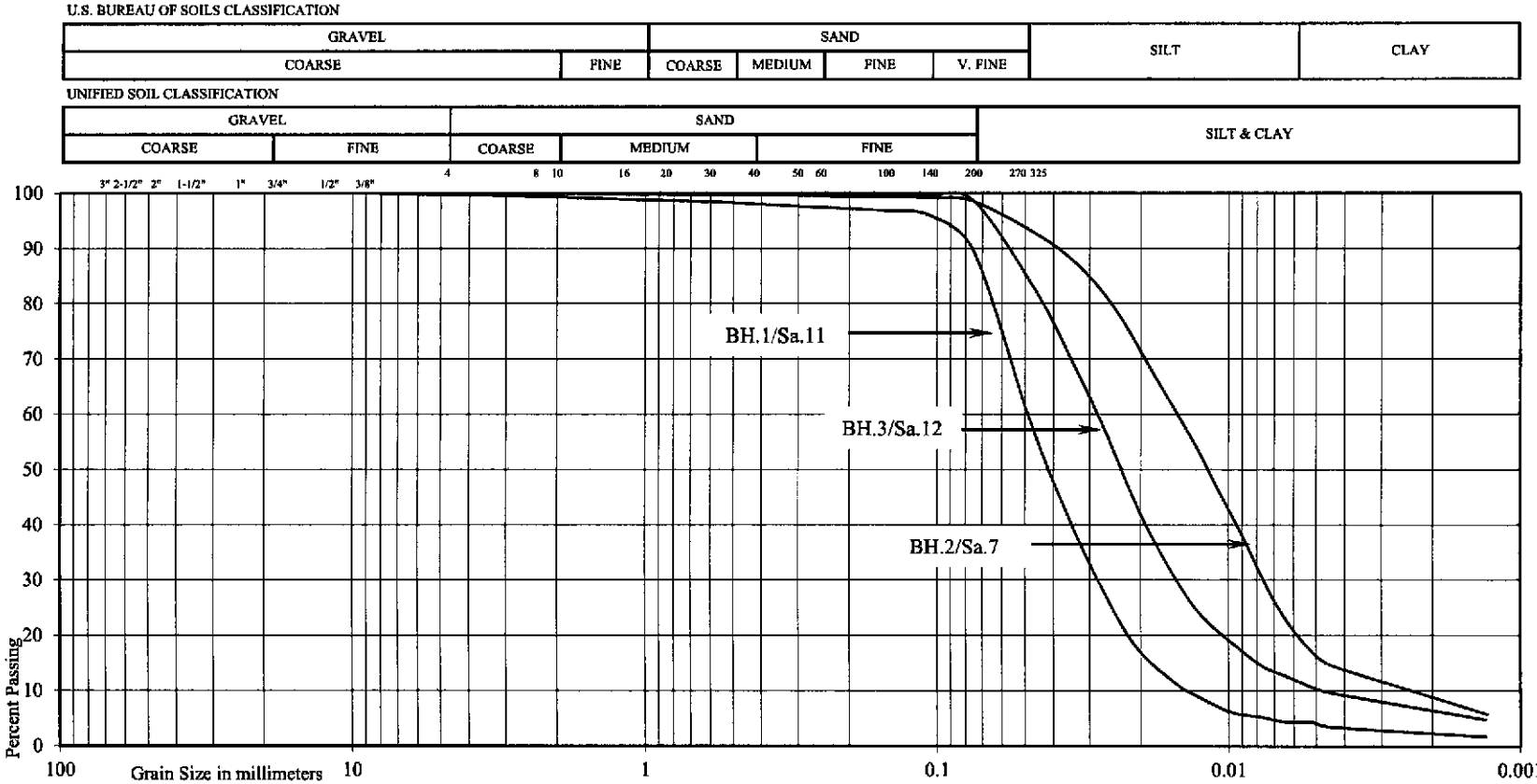
RESULTS OF GRAIN SIZE ANALYSES

REFERENCE NO. 1204-S048E

Soil Engineers Ltd.

GRAIN SIZE DISTRIBUTION

Reference No: 1204-S048



Project:	Proposed Culvert Replacement			BH./Sa.	1/11	2/7	3/12
Location:	Centennial Drive to north of Brock Street, Town of Uxbridge			Liquid Limit (%) =	-	-	-
				Plastic Limit (%) =	-	-	-
Borehole No:	1	2	3	Plasticity Index (%) =	-	-	-
Sample No:	11	7	12	Moisture Content (%) =	22	20	20
Depth (m):	10.9	6.3	9.3	Estimated Permeability			
Elevation (m):	252.2	256.6	256.5	(cm./sec.) =	10^{-4}	10^{-6}	10^{-5}

Classification of Sample [& Group Symbol]: SILT

a trace to some clay, a trace of fine sand

Figure: 10

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FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (416) 754-8516	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

APPENDIX 'B'

CERTIFICATES OF ANALYSES

(SOIL SAMPLES AND QA/QC SOIL SAMPLE FOR WATER BODY LAND, TABLE 8)

REFERENCE NO. 1204-S048E

Soil Engineers Ltd.
ATTN: THARSHAN KAMALESWARAN
100 NUGGET AVENUE
TORONTO ON M1S 3A7

Date Received: 14-MAY-12
Report Date: 17-AUG-12 14:14 (MT)
Version: FINAL REV. 10

Client Phone: 416-754-8515

Certificate of Analysis

Lab Work Order #: L1146861
Project P.O. #: NOT SUBMITTED
Job Reference: 1204-S048E
C of C Numbers: 124529
Legal Site Desc:

Comments: 14-JUN-12: Additional PCB and SVOC's analysis added for Sample 1. Results included.

13-AUG-12: Fractions 1 to 3 results included for Table 8 criteria.

MATHUMAI GANESHAKUMAR
Account Manager

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L1146861-1 BH 1/3								
Sampled By: THARSHAN on 14-MAY-12 @ 12:(								
Matrix: SOIL								
Physical Tests								
Conductivity	2.32		0.0040	mS/cm	15-MAY-12		*0.7	*0.7
% Moisture	21.2		0.10	%	14-MAY-12			
pH	7.33		0.10	pH units	15-MAY-12			
Cyanides								
Cyanide, Weak Acid Diss	<0.050		0.050	ug/g	15-MAY-12		0.051	0.051
Saturated Paste Extractables								
SAR	10.7		0.10	SAR	15-MAY-12		*5	*5
Metals								
Antimony (Sb)	<1.0		1.0	ug/g	15-MAY-12		1	1.3
Arsenic (As)	1.6		1.0	ug/g	15-MAY-12		11	18
Barium (Ba)	81.9		1.0	ug/g	15-MAY-12		210	220
Beryllium (Be)	<0.50		0.50	ug/g	15-MAY-12		2.5	2.5
Boron (B)	5.9		5.0	ug/g	15-MAY-12		36	36
Boron (B), Hot Water Ext.	0.66		0.10	ug/g	15-MAY-12		1.5	1.5
Cadmium (Cd)	0.65		0.50	ug/g	15-MAY-12		1	1.2
Chromium (Cr)	11.4		1.0	ug/g	15-MAY-12		67	70
Cobalt (Co)	3.0		1.0	ug/g	15-MAY-12		22	22
Copper (Cu)	10.0		1.0	ug/g	15-MAY-12		62	92
Lead (Pb)	25.2		1.0	ug/g	15-MAY-12		45	120
Mercury (Hg)	0.111		0.010	ug/g	15-MAY-12		0.2	0.27
Molybdenum (Mo)	<1.0		1.0	ug/g	15-MAY-12		2	2
Nickel (Ni)	6.3		1.0	ug/g	15-MAY-12		37	82
Selenium (Se)	<1.0		1.0	ug/g	15-MAY-12		1.2	1.5
Silver (Ag)	<0.20		0.20	ug/g	15-MAY-12		0.5	0.5
Thallium (Tl)	<0.50		0.50	ug/g	15-MAY-12		1	1
Uranium (U)	<1.0		1.0	ug/g	15-MAY-12		1.9	2.5
Vanadium (V)	17.7		1.0	ug/g	15-MAY-12		86	86
Zinc (Zn)	138		5.0	ug/g	15-MAY-12		290	290
Speciated Metals								
Chromium, Hexavalent	<0.20		0.20	ug/g	15-MAY-12		0.66	0.66
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	<0.050		0.050	ug/g	15-MAY-12		0.05	0.072
Acenaphthylene	<0.050		0.050	ug/g	15-MAY-12		0.093	0.093
Anthracene	<0.050		0.050	ug/g	15-MAY-12		0.22	0.22
Benzo(a)anthracene	0.098		0.050	ug/g	15-MAY-12		0.32	0.36
Benzo(a)pyrene	0.098		0.050	ug/g	15-MAY-12		*0.078	0.3
Benzo(b)fluoranthene	0.081		0.050	ug/g	15-MAY-12		0.3	0.47
Benzo(g,h,i)perylene	0.060		0.050	ug/g	15-MAY-12		0.2	0.68
Benzo(k)fluoranthene	0.065		0.050	ug/g	15-MAY-12		0.24	0.48
Chrysene	0.097		0.050	ug/g	15-MAY-12		0.34	2.8
Dibenzo(ah)anthracene	<0.050		0.050	ug/g	15-MAY-12		0.1	0.1
Fluoranthene	0.181		0.050	ug/g	15-MAY-12		0.69	0.69
Fluorene	<0.050		0.050	ug/g	15-MAY-12		0.19	0.19
Indeno(1,2,3-cd)pyrene	0.065		0.050	ug/g	15-MAY-12		0.2	0.23
1+2-Methylnaphthalenes	<0.042		0.042	ug/g	14-MAY-12		0.05	0.59

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) = [Suite] - ON-511-T8-Soil/Water

#1: ON511/11-T8-Ground Water - All Types of Property Use

#2: ON511/11-T8-Soil-Agricultural or Other Property Use

#3: ON511/11-T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L1146861-1 BH 1/3								
Sampled By: THARSHAN on 14-MAY-12 @ 12:(								
Matrix: SOIL								
Polycyclic Aromatic Hydrocarbons								
1-Methylnaphthalene	<0.030		0.030	ug/g	15-MAY-12		0.05	0.59
2-Methylnaphthalene	<0.030		0.030	ug/g	15-MAY-12		0.05	0.59
Naphthalene	<0.050		0.050	ug/g	15-MAY-12		0.05	0.09
Phenanthrene	0.095		0.050	ug/g	15-MAY-12		0.56	0.69
Pyrene	0.174		0.050	ug/g	15-MAY-12		0.49	1
Surrogate: 2-Fluorobiphenyl	97.2		50-140	%	15-MAY-12			
Surrogate: p-Terphenyl d14	95.8		50-140	%	15-MAY-12			
Semi-Volatile Organics								
Biphenyl	<0.05	DLMDL	0.050	mg/kg	13-JUN-12		0.05	0.05
4-Bromophenylphenyl ether	<0.10		0.10	mg/kg	13-JUN-12			
Butylbenzyl phthalate	<0.10		0.10	mg/kg	13-JUN-12			
Camphene	<0.10		0.10	mg/kg	13-JUN-12			
4-Chloro-3-methylphenol	<0.10		0.10	mg/kg	13-JUN-12			
4-Chloroaniline	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
Bis(2-chloroethoxy)methane	<0.10		0.10	mg/kg	13-JUN-12			
Bis(2-Chloroethyl)_ether	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
Bis(2-chloroisopropyl)ether	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
1-Chloronaphthalene	<0.10		0.10	mg/kg	13-JUN-12			
2-Chloronaphthalene	<0.10		0.10	mg/kg	13-JUN-12			
2-Chlorophenol	<0.10		0.10	mg/kg	13-JUN-12		0.1	0.1
4-Chlorophenyl phenyl ether	<0.10		0.10	mg/kg	13-JUN-12			
3&4-Methylphenol	<0.10		0.10	mg/kg	13-JUN-12			
Cresols (total)	<0.20		0.20	mg/kg	13-JUN-12			
Dibenzofuran	<0.10		0.10	mg/kg	13-JUN-12			
3,3'-Dichlorobenzidine	<0.10		0.10	mg/kg	13-JUN-12		1	1
2,4-Dichlorophenol	<0.10		0.10	mg/kg	13-JUN-12		0.1	0.1
2,6-Dichlorophenol	<0.10		0.10	mg/kg	13-JUN-12			
Diethylphthalate	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
Dimethylphthalate	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
2,4-Dimethylphenol	<0.10		0.10	mg/kg	13-JUN-12		0.2	0.2
Di-n-butylphthalate	<0.10		0.10	mg/kg	13-JUN-12			
2,4-Dinitrophenol	<0.20		0.20	mg/kg	13-JUN-12		2	2
2,4-Dinitrotoluene	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
2,6-Dinitrotoluene	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
Di-n-octylphthalate	<0.10		0.10	mg/kg	13-JUN-12			
Diphenyl ether	<0.10		0.10	mg/kg	13-JUN-12			
Diphenylamine	<0.10		0.10	mg/kg	13-JUN-12			
Bis(2-ethylhexyl)phthalate	0.69		0.10	mg/kg	13-JUN-12		5	5
Hexachlorobenzene	<0.10		0.10	mg/kg	13-JUN-12		**0.02	**0.02
Hexachlorobutadiene	<0.10		0.10	mg/kg	13-JUN-12		**0.01	**0.01
Hexachlorocyclopentadiene	<0.10		0.10	mg/kg	13-JUN-12			
Hexachloroethane	<0.10		0.10	mg/kg	13-JUN-12		**0.01	**0.01
Indole	<0.10		0.10	mg/kg	13-JUN-12			
Isophorone	<0.10		0.10	mg/kg	13-JUN-12			
4,6-Dinitro-2-methylphenol	<1.0		1.0	mg/kg	13-JUN-12			
2-Methylphenol	<0.10		0.10	mg/kg	13-JUN-12			
5-Nitroacenaphthene	<0.10		0.10	mg/kg	13-JUN-12			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) = [Suite] - ON-511-T8-Soil/Water

#1: ON511/11-T8-Ground Water - All Types of Property Use

#2: ON511/11-T8-Soil-Agricultural or Other Property Use

#3: ON511/11-T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

Sample Details Grouping / Analyte	Result	Qualifier	D.L	Units	Analyzed	Guideline Limits #1	#2	#3
L1146861-1 BH 1/3								
Sampled By: THARSHAN on 14-MAY-12 @ 12:(								
Matrix: SOIL								
Semi-Volatile Organics								
Nitrobenzene	<0.10		0.10	mg/kg	13-JUN-12			
2-Nitrophenol	<0.20		0.20	mg/kg	13-JUN-12			
4-Nitrophenol	<0.20		0.20	mg/kg	13-JUN-12			
N-Nitroso-di-n-propylamine	<0.10		0.10	mg/kg	13-JUN-12			
Pentachlorophenol	<0.10		0.10	mg/kg	13-JUN-12		0.1	0.1
Perylene	<0.10		0.10	mg/kg	13-JUN-12			
Phenol	<0.10		0.10	mg/kg	13-JUN-12		0.5	0.5
2,3,4,5-Tetrachlorophenol	<0.10		0.10	mg/kg	13-JUN-12			
2,3,4,6-Tetrachlorophenol	<0.10		0.10	mg/kg	13-JUN-12			
2,3,5,6-Tetrachlorophenol	<0.10		0.10	mg/kg	13-JUN-12			
1,2,3-Trichlorobenzene	<0.10		0.10	mg/kg	13-JUN-12			
1,2,4-Trichlorobenzene	<0.050	DLMDL	0.050	mg/kg	13-JUN-12		0.05	0.05
2,3,4-Trichlorophenol	<0.10		0.10	mg/kg	13-JUN-12			
2,3,5-Trichlorophenol	<0.10		0.10	mg/kg	13-JUN-12			
2,4,5-Trichlorophenol	<0.10		0.10	mg/kg	13-JUN-12		0.1	0.1
2,4,6-Trichlorophenol	<0.10		0.10	mg/kg	13-JUN-12		0.1	0.1
Surrogate: 2-Fluorobiphenyl	95.0		50-150	%	13-JUN-12			
Surrogate: Nitrobenzene d5	87.6		50-150	%	13-JUN-12			
Surrogate: Phenol d5	91.3		30-120	%	13-JUN-12			
Surrogate: p-Terphenyl d14	96.7		50-150	%	13-JUN-12			
Surrogate: 2,4,6-Tribromophenol	92.8		40-160	%	13-JUN-12			
Polychlorinated Biphenyls								
Aroclor 1242	<0.025	DLM	0.025	ug/g	12-JUN-12			
Aroclor 1248	<0.010		0.010	ug/g	12-JUN-12			
Aroclor 1254	<0.010		0.010	ug/g	12-JUN-12			
Aroclor 1260	<0.010		0.010	ug/g	12-JUN-12			
Total PCBs	<0.025	DLM	0.025	ug/g	12-JUN-12		0.3	0.3
Surrogate: d14-Terphenyl	121.4		60-140	%	12-JUN-12			
L1146861-2 BH 1/5								
Sampled By: THARSHAN on 14-MAY-12 @ 12:(								
Matrix: SOIL								
Physical Tests								
% Moisture	58.6		0.10	%	14-MAY-12			
Volatile Organic Compounds								
Acetone	<0.75	DLHM	0.75	ug/g	15-MAY-12		**0.5	**0.5
Benzene	<0.030	DLHM	0.030	ug/g	15-MAY-12		**0.02	**0.02
Bromodichloromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Bromoform	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Bromomethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
Carbon tetrachloride	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Chlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Dibromochloromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Chloroform	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,2-Dibromoethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
1,2-Dichlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) = [Suite] - ON-511-T8-Soil/Water

#1: ON511/11-T8-Ground Water - All Types of Property Use

#2: ON511/11-T8-Soil-Agricultural or Other Property Use

#3: ON511/11-T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L1146861-2 BH 1/5								
Sampled By: THARSHAN on 14-MAY-12 @ 12:(								
Matrix: SOIL								
Volatile Organic Compounds								
1,3-Dichlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,4-Dichlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Dichlorodifluoromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1-Dichloroethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,2-Dichloroethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
1,1-Dichloroethylene	<0.064	DLMDL	0.064	ug/g	15-MAY-12		**0.05	**0.05
cis-1,2-Dichloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
trans-1,2-Dichloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	29-JUN-12		0.05	0.05
Methylene Chloride	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,2-Dichloropropane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
cis-1,3-Dichloropropene	<0.03	DLMDL	0.030	ug/g	15-MAY-12			
trans-1,3-Dichloropropene	<0.03	DLHM	0.030	ug/g	15-MAY-12			
Ethyl Benzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
n-Hexane	<0.075	DLHM	0.075	ug/g	15-MAY-12	51	**0.05	**0.05
Methyl Ethyl Ketone	<0.75	DLHM	0.75	ug/g	15-MAY-12		**0.5	**0.5
Methyl Isobutyl Ketone	<0.75	DLHM	0.75	ug/g	15-MAY-12		**0.5	**0.5
MTBE	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Styrene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1,1,2-Tetrachloroethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1,2,2-Tetrachloroethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
Tetrachloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Toluene	<0.30	DLHM	0.30	ug/g	15-MAY-12		**0.2	**0.2
1,1,1-Trichloroethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1,2-Trichloroethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
Trichloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Trichlorofluoromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	0.25
Vinyl chloride	<0.030	DLHM	0.030	ug/g	15-MAY-12		**0.02	**0.02
o-Xylene	<0.030	DLHM	0.030	ug/g	15-MAY-12			
m+p-Xylenes	<0.045	DLHM	0.045	ug/g	15-MAY-12			
Xylenes (Total)	<0.054		0.054	ug/g	15-MAY-12		**0.05	**0.05
Surrogate: 4-Bromofluorobenzene	88.1		50-140	%	15-MAY-12			
Surrogate: 3,4-Dichlorotoluene	127.0		50-140	%	15-MAY-12			
Surrogate: 1,4-Difluorobenzene	103.0		50-140	%	15-MAY-12			
L1146861-3 DUP								
Sampled By: THARSHAN on 14-MAY-12 @ 12:(								
Matrix: SOIL						#1	#2	#3
Physical Tests								
% Moisture	52.3		0.10	%	14-MAY-12			
Volatile Organic Compounds								
Acetone	<0.75	DLHM	0.75	ug/g	15-MAY-12		**0.5	**0.5
Benzene	<0.030	DLHM	0.030	ug/g	15-MAY-12		**0.02	**0.02
Bromodichloromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Bromoform	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Bromomethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) = [Suite] - ON-511-T8-Soil/Water

#1: ON511/11-T8-Ground Water - All Types of Property Use

#2: ON511/11-T8-Soil-Agricultural or Other Property Use

#3: ON511/11-T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	#2	#3
L1146861-3 DUP								
Sampled By: THARSHAN on 14-MAY-12 @ 12:(								
Matrix: SOIL								
Volatile Organic Compounds								
Carbon tetrachloride	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Chlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Dibromochloromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Chloroform	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,2-Dibromoethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
1,2-Dichlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,3-Dichlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,4-Dichlorobenzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Dichlorodifluoromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1-Dichloroethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,2-Dichloroethane	<0.055	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
1,1-Dichloroethylene	<0.064	DLMDL	0.064	ug/g	15-MAY-12		**0.05	**0.05
cis-1,2-Dichloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
trans-1,2-Dichloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g	29-JUN-12		0.05	0.05
Methylene Chloride	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,2-Dichloropropane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
cis-1,3-Dichloropropene	<0.03	DLMDL	0.030	ug/g	15-MAY-12			
trans-1,3-Dichloropropene	<0.03	DLMDL	0.030	ug/g	15-MAY-12			
Ethyl Benzene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
n-Hexane	<0.075	DLHM	0.075	ug/g	15-MAY-12	51	**0.05	**0.05
Methyl Ethyl Ketone	<0.75	DLHM	0.75	ug/g	15-MAY-12		**0.5	**0.5
Methyl Isobutyl Ketone	<0.75	DLHM	0.75	ug/g	15-MAY-12		**0.5	**0.5
MTBE	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Styrene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1,1,2-Tetrachloroethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1,2,2-Tetrachloroethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
Tetrachloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Toluene	<0.30	DLHM	0.30	ug/g	15-MAY-12		**0.2	**0.2
1,1,1-Trichloroethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
1,1,2-Trichloroethane	<0.05	DLMDL	0.050	ug/g	15-MAY-12		0.05	0.05
Trichloroethylene	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	**0.05
Trichlorofluoromethane	<0.075	DLHM	0.075	ug/g	15-MAY-12		**0.05	0.25
Vinyl chloride	<0.030	DLHM	0.030	ug/g	15-MAY-12		**0.02	**0.02
o-Xylene	<0.030	DLHM	0.030	ug/g	15-MAY-12			
m+p-Xylenes	<0.045	DLHM	0.045	ug/g	15-MAY-12			
Xylenes (Total)	<0.054		0.054	ug/g	15-MAY-12		**0.05	**0.05
Surrogate: 4-Bromofluorobenzene	89.4		50-140	%	15-MAY-12			
Surrogate: 3,4-Dichlorotoluene	137.1		50-140	%	15-MAY-12			
Surrogate: 1,4-Difluorobenzene	101.3		50-140	%	15-MAY-12			

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) = [Suite] - ON-511-T8-Soil/Water

#1: ON511/11-T8-Ground Water - All Types of Property Use

#2: ON511/11-T8-Soil-Agricultural or Other Property Use

#3: ON511/11-T8-Soil-Res/Park/Inst/Ind/Com/Commu Property Use

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
DLHM	Detection Limit Adjusted: Sample has High Moisture Content
DLMDL	Detection Limit calculated from MDL to meet client specification

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
625-NO-PAH-WT	Soil	EPA 8270 Extractables	SW846 8270

Soil samples are extracted and the extracts are analyzed by GC/MSD.

B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CL-R511-WT	Water	Chloride-O.Reg 153/04 (July 2011)	EPA 300.0 (IC)

Aqueous samples are analyzed directly or may be filtered in the laboratory prior to analysis using ion chromatography.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04 (July 2011)	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Soil	Hex Chrom-O.Reg 153/04 (July 2011)	SW846 3060A/7199 R511

Soil sample undergoes a alkaline digestion process where the sample is acidified and derivatized with 1,5-diphenylcarbazide (DPC) using ion chromatography.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Soil	Conductivity-O.Reg 153/04 (July 2011)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-511-WT	Water	F1-O.Reg 153/04 (July 2011)	MOE DECPH-E3421/CCME TIER 1

Fraction F1 is determined by purging a volume of a ground water sample followed by GC/FID analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

F1-F4-511-CALC-WT Water F1-F4 Hydrocarbon Calculated Parameters CCME CWS-PHC DEC-2000 - PUB# 1310-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-F4-511-CALC-WT Soil F1-F4 Hydrocarbon Calculated Parameters CCME CWS-PHC DEC-2000 - PUB# 1310-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F2-F4-511-WT Water F2-F4-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1

Fractions F2, F3 and F4 are determined by liquid/liquid extraction with a solvent. The solvent recovered from the extracted sample is dried and treated to remove polar material. The extract is then analyzed by GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1

Fractions F2, F3 and F4 are determined by extracting a soil sample with a solvent mix. The solvent recovered from the extracted soil sample is dried and treated to remove polar material. The extract is analyzed by GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-DIS-R511-WT	Water	Hg-Dissolved-O.Reg 153/04 (July 2011)	SW846 7470A R511

Liquid sample is digested with a heated, strong, mixed acid solution to convert all forms of mercury to divalent mercury. The divalent mercury is then reduced to elemental mercury, sparged from solution and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-R511-WT	Soil	Mercury-O.Reg 153/04 (July 2011)	SW846 3050B/7471

Solid sample is digested with a heated, strong, mixed acid solution to convert all forms of mercury to divalent mercury. The divalent mercury is then reduced to elemental mercury, sparged from solution and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-R511-WT	Water	Metals-Dissolved-153/04 (July 2011)	EPA 200.8

Ground water samples are filtered and preserved and analyzed by ICP/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-UG/G-CCMS-WT	Soil	Metal Scan Collision Cell ICPMS	EPA 200.2/6020A

Sample is vigorously digested with nitric acid and hydrogen peroxide. Analysis is conducted by ICP/MS.

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-R511-WT	Water	pH-O. Reg 153/04 (July 2011)	MOEE E3137A-R511

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-R511-WT	Soil	pH-O.Reg 153/04 (July 2011)	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

VOC-511-PTMS-WT Water VOC-O. Reg 153/04 (July 2011) SW846 8260

The purge and trap method purges Volatile Organic Compounds (VOC) from aqueous samples by bubbling an inert gas through the sample. Once in the gaseous phase, the analytes are swept from the purging device and trapped in a short column. The compounds are that are trapped on the column are thermally desorbed and transferred to the analytical column of the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

*** ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody numbers:

124529

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

ALS Environmental

Quality Control Report

Workorder: L1146861 Report Date: 17-AUG-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487670-1 CVS								
1-Chloronaphthalene			113.1		%		80-140	12-JUN-12
1,2,3-Trichlorobenzene			108.7		%		50-150	12-JUN-12
1,2,4-Trichlorobenzene			107.6		%		70-130	12-JUN-12
2-Chloronaphthalene			97.1		%		50-120	12-JUN-12
2-Chlorophenol			100.2		%		70-130	12-JUN-12
2-Methylphenol			100.8		%		70-130	12-JUN-12
2-Nitrophenol			106.3		%		50-140	12-JUN-12
2,3,4-Trichlorophenol			104.3		%		70-130	12-JUN-12
2,3,4,5-Tetrachlorophenol			110.5		%		60-140	12-JUN-12
2,3,4,6-Tetrachlorophenol			104.7		%		60-140	12-JUN-12
2,3,5-Trichlorophenol			111.0		%		70-130	12-JUN-12
2,3,5,6-Tetrachlorophenol			93.8		%		60-140	12-JUN-12
2,4-Dichlorophenol			108.3		%		80-125	12-JUN-12
2,4-Dimethylphenol			113.9		%		30-150	12-JUN-12
2,4-Dinitrophenol			96.4		%		30-150	12-JUN-12
2,4-Dinitrotoluene			93.4		%		50-140	12-JUN-12
2,4,5-Trichlorophenol			102.8		%		70-130	12-JUN-12
2,4,6-Trichlorophenol			104.7		%		60-120	12-JUN-12
2,6-Dichlorophenol			107.6		%		75-125	12-JUN-12
2,6-Dinitrotoluene			104.0		%		60-140	12-JUN-12
3,3'-Dichlorobenzidine			84.4		%		60-140	12-JUN-12
3&4-Methylphenol			100.9		%		80-130	12-JUN-12
4-Bromophenylphenyl ether			109.5		%		70-130	12-JUN-12
4-Chloro-3-methylphenol			103.2		%		60-130	12-JUN-12
4-Chloroaniline			92.8		%		40-150	12-JUN-12
4-Chlorophenyl phenyl ether			108.7		%		70-130	12-JUN-12
4-Nitrophenol			83.2		%		40-140	12-JUN-12
4,6-Dinitro-2-methylphenol			100.9		%		70-140	12-JUN-12
5-Nitroacenaphthene			108.2		%		30-140	12-JUN-12
Biphenyl			107.3		%		70-130	12-JUN-12
Bis(2-chloroethoxy)methane			112.7		%		70-140	12-JUN-12
Bis(2-Chloroethyl)_ether			105.8		%		70-130	12-JUN-12
Bis(2-chloroisopropyl)ether			107.3		%		70-130	12-JUN-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487670-1 CVS								
Bis(2-ethylhexyl)phthalate			101.6		%		50-150	12-JUN-12
Butylbenzyl phthalate			99.6		%		50-140	12-JUN-12
Camphene			104.8		%		20-150	12-JUN-12
Di-n-butylphthalate			105.5		%		50-150	12-JUN-12
Di-n-octylphthalate			106.2		%		40-130	12-JUN-12
Dibenzofuran			107.6		%		70-130	12-JUN-12
Diethylphthalate			108.7		%		60-150	12-JUN-12
Dimethylphthalate			109.3		%		70-130	12-JUN-12
Diphenyl ether			106.3		%		50-130	12-JUN-12
Diphenylamine			123.1		%		30-140.3	12-JUN-12
Hexachlorobenzene			103.2		%		50-150	12-JUN-12
Hexachlorobutadiene			107.4		%		60-140	12-JUN-12
Hexachlorocyclopentadiene			77.8		%		50-150	12-JUN-12
Hexachloroethane			98.7		%		50-150	12-JUN-12
Indole			83.1		%		60-150	12-JUN-12
Isophorone			74.9		%		60-140	12-JUN-12
N-Nitroso-di-n-propylamine			98.3		%		50-150	12-JUN-12
Nitrobenzene			100.8		%		60-130	12-JUN-12
Pentachlorophenol			100.5		%		30-140	12-JUN-12
Perylene			101.8		%		70-130	12-JUN-12
Phenol			98.6		%		80-130	12-JUN-12
WG1487404-4 DUP		**L1146861-1**						
1-Chloronaphthalene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
1,2,3-Trichlorobenzene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
1,2,4-Trichlorobenzene		<0.050	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2-Chloronaphthalene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2-Chlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2-Methylphenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2-Nitrophenol		<0.20	<0.20	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,3,4-Trichlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,3,4,5-Tetrachlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,3,4,6-Tetrachlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,3,5-Trichlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-4 DUP		**L1146861-1**						
2,3,5,6-Tetrachlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,4-Dichlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,4-Dimethylphenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,4-Dinitrophenol		<0.20	<0.20	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,4-Dinitrotoluene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,4,5-Trichlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,4,6-Trichlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,6-Dichlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
2,6-Dinitrotoluene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
3,3'-Dichlorobenzidine		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
3&4-Methylphenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
4-Bromophenylphenyl ether		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
4-Chloro-3-methylphenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
4-Chloroaniline		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
4-Chlorophenyl phenyl ether		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
4-Nitrophenol		<0.20	<0.20	RPD-NA	mg/kg	N/A	50	13-JUN-12
4,6-Dinitro-2-methylphenol		<1.0	<1.0	RPD-NA	mg/kg	N/A	50	13-JUN-12
5-Nitroacenaphthene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Biphenyl		<0.05	<0.10	RPD-NA	mg/kg	N/A	65	13-JUN-12
Bis(2-chloroethoxy)methane		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Bis(2-Chloroethyl)_ether		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Bis(2-chloroisopropyl)ether		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Bis(2-ethylhexyl)phthalate		0.69	0.51		mg/kg	30	50	13-JUN-12
Butylbenzyl phthalate		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Camphene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Di-n-butylphthalate		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Di-n-octylphthalate		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Dibenzofuran		<0.10	<0.10	RPD-NA	mg/kg	N/A	65	13-JUN-12
Diethylphthalate		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Dimethylphthalate		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Diphenyl ether		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Diphenylamine		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Hexachlorobenzene		<0.10	<0.10		mg/kg			13-JUN-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-4 DUP		**L1146861-1**						
Hexachlorobenzene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Hexachlorobutadiene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Hexachlorocyclopentadiene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Hexachloroethane		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Indole		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Isophorone		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
N-Nitroso-di-n-propylamine		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Nitrobenzene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Pentachlorophenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Perylene		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
Phenol		<0.10	<0.10	RPD-NA	mg/kg	N/A	50	13-JUN-12
WG1487404-2 LCS								
1-Chloronaphthalene			95.8		%		50-140	12-JUN-12
1,2,3-Trichlorobenzene			92.1		%		50-140	12-JUN-12
1,2,4-Trichlorobenzene			89.2		%		50-140	12-JUN-12
2-Chloronaphthalene			84.7		%		50-130	12-JUN-12
2-Chlorophenol			82.9		%		50-140	12-JUN-12
2-Methylphenol			83.5		%		50-140	12-JUN-12
2-Nitrophenol			92.4		%		40-130	12-JUN-12
2,3,4-Trichlorophenol			84.6		%		60-130	12-JUN-12
2,3,4,5-Tetrachlorophenol			82.4		%		60-130	12-JUN-12
2,3,4,6-Tetrachlorophenol			85.9		%		60-130	12-JUN-12
2,3,5-Trichlorophenol			90.4		%		60-130	12-JUN-12
2,3,5,6-Tetrachlorophenol			83.4		%		60-130	12-JUN-12
2,4-Dichlorophenol			87.8		%		60-130	12-JUN-12
2,4-Dimethylphenol			91.1		%		30-130	12-JUN-12
2,4-Dinitrophenol			55.0		%		40-130	12-JUN-12
2,4-Dinitrotoluene			87.1		%		50-140	12-JUN-12
2,4,5-Trichlorophenol			83.8		%		60-130	12-JUN-12
2,4,6-Trichlorophenol			85.6		%		60-130	12-JUN-12
2,6-Dichlorophenol			87.8		%		60-130	12-JUN-12
2,6-Dinitrotoluene			89.6		%		50-140	12-JUN-12
3,3'-Dichlorobenzidine			85.1		%		50-140	12-JUN-12

ALS Environmental

Quality Control Report

Workorder: L1146861 Report Date: 17-AUG-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7

Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-2 LCS								
3&4-Methylphenol			82.3		%		50-140	12-JUN-12
4-Bromophenylphenyl ether			97.9		%		50-140	12-JUN-12
4-Chloro-3-methylphenol			86.0		%		60-130	12-JUN-12
4-Chloroaniline			85.6		%		50-140	12-JUN-12
4-Chlorophenyl phenyl ether			96.3		%		50-140	12-JUN-12
4-Nitrophenol			74.5		%		40-130	12-JUN-12
4,6-Dinitro-2-methylphenol			77.9		%		40-130	12-JUN-12
5-Nitroacenaphthene			91.7		%		50-140	12-JUN-12
Biphenyl			95.0		%		50-140	12-JUN-12
Bis(2-chloroethoxy)methane			95.7		%		50-140	12-JUN-12
Bis(2-Chloroethyl)_ether			88.5		%		50-140	12-JUN-12
Bis(2-chloroisopropyl)ether			90.4		%		50-140	12-JUN-12
Bis(2-ethylhexyl)phthalate			89.1		%		50-150	12-JUN-12
Butylbenzyl phthalate			86.3		%		50-150	12-JUN-12
Camphene			73.8		%		50-140	12-JUN-12
Di-n-butylphthalate			94.7		%		50-150	12-JUN-12
Di-n-octylphthalate			92.1		%		50-150	12-JUN-12
Dibenzofuran			92.6		%		50-140	12-JUN-12
Diethylphthalate			95.2		%		50-150	12-JUN-12
Dimethylphthalate			93.4		%		50-150	12-JUN-12
Diphenyl ether			93.0		%		50-140	12-JUN-12
Diphenylamine			109.0		%		50-140	12-JUN-12
Hexachlorobenzene			93.2		%		50-140	12-JUN-12
Hexachlorobutadiene			88.7		%		50-140	12-JUN-12
Hexachlorocyclopentadiene			74.5		%		50-140	12-JUN-12
Hexachloroethane			78.8		%		50-140	12-JUN-12
Indole			82.7		%		50-140	12-JUN-12
Isophorone			70.3		%		50-140	12-JUN-12
N-Nitroso-di-n-propylamine			84.5		%		50-140	12-JUN-12
Nitrobenzene			85.1		%		50-140	12-JUN-12
Pentachlorophenol			80.1		%		60-130	12-JUN-12
Perylene			97.4		%		50-140	13-JUN-12
Phenol			80.7		%		30-130	12-JUN-12
WG1487404-3 LCSD		**WG1487404-2**						

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-3 LCSD		**WG1487404-2**						
1-Chloronaphthalene		95.8	97.3		%	1.6	50	13-JUN-12
1,2,3-Trichlorobenzene		92.1	91.4		%	0.7	50	13-JUN-12
1,2,4-Trichlorobenzene		89.2	88.8		%	0.5	50	13-JUN-12
2-Chloronaphthalene		84.7	83.6		%	1.3	50	13-JUN-12
2-Chlorophenol		82.9	83.1		%	0.3	50	13-JUN-12
2-Methylphenol		83.5	84.5		%	1.2	50	13-JUN-12
2-Nitrophenol		92.4	91.2		%	1.3	50	13-JUN-12
2,3,4-Trichlorophenol		84.6	86.3		%	2.0	50	13-JUN-12
2,3,4,5-Tetrachlorophenol		82.4	90.1		%	8.9	50	13-JUN-12
2,3,4,6-Tetrachlorophenol		85.9	85.5		%	0.5	50	13-JUN-12
2,3,5-Trichlorophenol		90.4	91.0		%	0.6	50	13-JUN-12
2,3,5,6-Tetrachlorophenol		83.4	77.5		%	7.4	50	13-JUN-12
2,4-Dichlorophenol		87.8	86.8		%	1.1	50	13-JUN-12
2,4-Dimethylphenol		91.1	91.6		%	0.6	50	13-JUN-12
2,4-Dinitrophenol		55.0	55.4		%	0.6	50	13-JUN-12
2,4-Dinitrotoluene		87.1	84.5		%	3.0	50	13-JUN-12
2,4,5-Trichlorophenol		83.8	85.1		%	1.5	50	13-JUN-12
2,4,6-Trichlorophenol		85.6	86.7		%	1.2	50	13-JUN-12
2,6-Dichlorophenol		87.8	89.2		%	1.5	50	13-JUN-12
2,6-Dinitrotoluene		89.6	90.5		%	1.0	50	13-JUN-12
3,3'-Dichlorobenzidine		85.1	84.6		%	0.6	50	13-JUN-12
3&4-Methylphenol		82.3	82.6		%	0.4	50	13-JUN-12
4-Bromophenylphenyl ether		97.9	97.2		%	0.7	50	13-JUN-12
4-Chloro-3-methylphenol		86.0	87.5		%	1.7	50	13-JUN-12
4-Chloroaniline		85.6	86.1		%	0.6	50	13-JUN-12
4-Chlorophenyl phenyl ether		96.3	95.6		%	0.7	50	13-JUN-12
4-Nitrophenol		74.5	72.6		%	2.5	50	13-JUN-12
4,6-Dinitro-2-methylphenol		77.9	77.8		%	0.1	50	13-JUN-12
5-Nitroacenaphthene		91.7	90.6		%	1.2	50	13-JUN-12
Biphenyl		95.0	92.9		%	2.2	50	13-JUN-12
Bis(2-chloroethoxy)methane		95.7	96.8		%	1.1	50	13-JUN-12
Bis(2-Chloroethyl)_ether		88.5	88.8		%	0.3	50	13-JUN-12
Bis(2-chloroisopropyl)ether		90.4	90.1		%			13-JUN-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-3 LCSD		**WG1487404-2**						
Bis(2-chloroisopropyl)ether		90.4	90.1		%	0.4	50	13-JUN-12
Bis(2-ethylhexyl)phthalate		89.1	84.7		%	5.1	50	13-JUN-12
Butylbenzyl phthalate		86.3	81.6		%	5.6	50	13-JUN-12
Camphene		73.8	73.8		%	0.0	50	13-JUN-12
Di-n-butylphthalate		94.7	92.4		%	2.4	50	13-JUN-12
Di-n-octylphthalate		92.1	87.5		%	5.1	50	13-JUN-12
Dibenzofuran		92.6	94.0		%	1.5	50	13-JUN-12
Diethylphthalate		95.2	93.7		%	1.6	50	13-JUN-12
Dimethylphthalate		93.4	94.0		%	0.7	50	13-JUN-12
Diphenyl ether		93.0	92.9		%	0.2	50	13-JUN-12
Diphenylamine		109.0	108.5		%	0.5	50	13-JUN-12
Hexachlorobenzene		93.2	92.9		%	0.3	50	13-JUN-12
Hexachlorobutadiene		88.7	88.2		%	0.6	50	13-JUN-12
Hexachlorocyclopentadiene		74.5	80.4		%	7.7	50	13-JUN-12
Hexachloroethane		78.8	80.0		%	1.6	50	13-JUN-12
Indole		82.7	81.1		%	2.0	50	13-JUN-12
Isophorone		70.3	70.6		%	0.3	50	13-JUN-12
N-Nitroso-di-n-propylamine		84.5	85.2		%	0.9	50	13-JUN-12
Nitrobenzene		85.1	85.8		%	0.8	50	13-JUN-12
Pentachlorophenol		80.1	78.5		%	2.0	50	13-JUN-12
Perylene		97.4	92.9		%	4.8	50	13-JUN-12
Phenol		80.7	82.6		%	2.3	50	13-JUN-12
WG1487404-1 MB								
1-Chloronaphthalene			<0.10		mg/kg		0.1	12-JUN-12
1,2,3-Trichlorobenzene			<0.10		mg/kg		0.1	12-JUN-12
1,2,4-Trichlorobenzene			<0.10		mg/kg		0.1	12-JUN-12
2-Chloronaphthalene			<0.10		mg/kg		0.1	12-JUN-12
2-Chlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2-Methylphenol			<0.10		mg/kg		0.1	12-JUN-12
2-Nitrophenol			<0.20		mg/kg		0.2	12-JUN-12
2,3,4-Trichlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,3,4,5-Tetrachlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,3,4,6-Tetrachlorophenol			<0.10		mg/kg		0.1	12-JUN-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-1 MB								
2,3,5-Trichlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,3,5,6-Tetrachlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,4-Dichlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,4-Dimethylphenol			<0.10		mg/kg		0.1	12-JUN-12
2,4-Dinitrophenol			<0.20		mg/kg		0.2	12-JUN-12
2,4-Dinitrotoluene			<0.10		mg/kg		0.1	12-JUN-12
2,4,5-Trichlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,4,6-Trichlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,6-Dichlorophenol			<0.10		mg/kg		0.1	12-JUN-12
2,6-Dinitrotoluene			<0.10		mg/kg		0.1	12-JUN-12
3,3'-Dichlorobenzidine			<0.10		mg/kg		0.1	12-JUN-12
3&4-Methylphenol			<0.10		mg/kg		0.1	12-JUN-12
4-Bromophenylphenyl ether			<0.10		mg/kg		0.1	12-JUN-12
4-Chloro-3-methylphenol			<0.10		mg/kg		0.1	12-JUN-12
4-Chloroaniline			<0.10		mg/kg		0.1	12-JUN-12
4-Chlorophenyl phenyl ether			<0.10		mg/kg		0.1	12-JUN-12
4-Nitrophenol			<0.20		mg/kg		0.2	12-JUN-12
4,6-Dinitro-2-methylphenol			<1.0		mg/kg		1	12-JUN-12
5-Nitroacenaphthene			<0.10		mg/kg		0.1	12-JUN-12
Biphenyl			<0.10		mg/kg		0.1	12-JUN-12
Bis(2-chloroethoxy)methane			<0.10		mg/kg		0.1	12-JUN-12
Bis(2-Chloroethyl)_ether			<0.10		mg/kg		0.1	12-JUN-12
Bis(2-chloroisopropyl)ether			<0.10		mg/kg		0.1	12-JUN-12
Bis(2-ethylhexyl)phthalate			<0.10		mg/kg		0.1	12-JUN-12
Butylbenzyl phthalate			<0.10		mg/kg		0.1	12-JUN-12
Camphene			<0.10		mg/kg		0.1	12-JUN-12
Di-n-butylphthalate			<0.10		mg/kg		0.1	12-JUN-12
Di-n-octylphthalate			<0.10		mg/kg		0.1	12-JUN-12
Dibenzofuran			<0.10		mg/kg		0.1	12-JUN-12
Diethylphthalate			<0.10		mg/kg		0.1	12-JUN-12
Dimethylphthalate			<0.10		mg/kg		0.1	12-JUN-12
Diphenyl ether			<0.10		mg/kg		0.1	12-JUN-12
Diphenylamine			<0.10		mg/kg		0.1	12-JUN-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-1 MB								
Hexachlorobenzene			<0.10		mg/kg		0.1	12-JUN-12
Hexachlorobutadiene			<0.10		mg/kg		0.1	12-JUN-12
Hexachlorocyclopentadiene			<0.10		mg/kg		0.1	12-JUN-12
Hexachloroethane			<0.10		mg/kg		0.1	12-JUN-12
Indole			<0.10		mg/kg		0.1	12-JUN-12
Isophorone			<0.10		mg/kg		0.1	12-JUN-12
N-Nitroso-di-n-propylamine			<0.10		mg/kg		0.1	12-JUN-12
Nitrobenzene			<0.10		mg/kg		0.1	12-JUN-12
Pentachlorophenol			<0.10		mg/kg		0.1	12-JUN-12
Perylene			<0.10		mg/kg		0.1	13-JUN-12
Phenol			<0.10		mg/kg		0.1	12-JUN-12
Surrogate: 2-Fluorobiphenyl			94.7		%		50-150	12-JUN-12
Surrogate: 2,4,6-Tribromophenol			87.6		%		40-160	12-JUN-12
Surrogate: Nitrobenzene d5			90.3		%		50-150	12-JUN-12
Surrogate: p-Terphenyl d14			94.8		%		50-150	12-JUN-12
Surrogate: Phenol d5			90.7		%		30-120	12-JUN-12
WG1487404-5 MS		**L1146861-1**						
1-Chloronaphthalene			99.3		%		50-140	13-JUN-12
1,2,3-Trichlorobenzene			86.2		%		50-140	13-JUN-12
1,2,4-Trichlorobenzene			82.7		%		50-140	13-JUN-12
2-Chloronaphthalene			80.8		%		50-140	13-JUN-12
2-Chlorophenol			80.6		%		50-140	13-JUN-12
2-Methylphenol			84.2		%		50-140	13-JUN-12
2-Nitrophenol			92.5		%		50-140	13-JUN-12
2,3,4-Trichlorophenol			85.8		%		50-140	13-JUN-12
2,3,4,5-Tetrachlorophenol			90.5		%		50-140	13-JUN-12
2,3,4,6-Tetrachlorophenol			86.5		%		50-140	13-JUN-12
2,3,5-Trichlorophenol			92.4		%		50-140	13-JUN-12
2,3,5,6-Tetrachlorophenol			79.3		%		50-140	13-JUN-12
2,4-Dichlorophenol			87.2		%		50-140	13-JUN-12
2,4-Dimethylphenol			92.7		%		50-140	13-JUN-12
2,4-Dinitrophenol			75.4		%		50-140	13-JUN-12
2,4-Dinitrotoluene			84.0		%		50-140	13-JUN-12
2,4,5-Trichlorophenol			87.0		%		50-140	13-JUN-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-5 MS		**L1146861-1**						
2,4,6-Trichlorophenol			88.2		%		50-140	13-JUN-12
2,6-Dichlorophenol			87.2		%		50-140	13-JUN-12
2,6-Dinitrotoluene			92.0		%		50-140	13-JUN-12
3,3'-Dichlorobenzidine			67.1		%		50-140	13-JUN-12
3&4-Methylphenol			82.1		%		50-140	13-JUN-12
4-Bromophenylphenyl ether			93.1		%		50-140	13-JUN-12
4-Chloro-3-methylphenol			89.1		%		50-140	13-JUN-12
4-Chloroaniline			60.4		%		40-150	13-JUN-12
4-Chlorophenyl phenyl ether			89.6		%		50-140	13-JUN-12
4-Nitrophenol			82.8		%		50-140	13-JUN-12
4,6-Dinitro-2-methylphenol			85.5		%		50-140	13-JUN-12
5-Nitroacenaphthene			98.9		%		50-140	13-JUN-12
Biphenyl			88.4		%		50-140	13-JUN-12
Bis(2-chloroethoxy)methane			92.2		%		50-140	13-JUN-12
Bis(2-Chloroethyl)_ether			85.1		%		50-140	13-JUN-12
Bis(2-chloroisopropyl)ether			84.1		%		50-140	13-JUN-12
Bis(2-ethylhexyl)phthalate			76.2		%		50-140	13-JUN-12
Butylbenzyl phthalate			88.2		%		50-140	13-JUN-12
Camphene			58.4		%		50-140	13-JUN-12
Di-n-butylphthalate			94.7		%		50-140	13-JUN-12
Di-n-octylphthalate			93.3		%		50-140	13-JUN-12
Dibenzofuran			91.2		%		50-140	13-JUN-12
Diethylphthalate			91.3		%		50-140	13-JUN-12
Dimethylphthalate			93.5		%		50-140	13-JUN-12
Diphenyl ether			86.8		%		50-140	13-JUN-12
Diphenylamine			104.8		%		50-140	13-JUN-12
Hexachlorobenzene			87.3		%		50-140	13-JUN-12
Hexachlorobutadiene			82.4		%		50-140	13-JUN-12
Hexachlorocyclopentadiene			55.0		%		50-140	13-JUN-12
Hexachloroethane			74.9		%		50-140	13-JUN-12
Indole			79.4		%		50-140	13-JUN-12
Isophorone			70.0		%		50-140	13-JUN-12
N-Nitroso-di-n-propylamine			85.5		%		50-140	13-JUN-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-NO-PAH-WT	**Soil**							
Batch R2381323								
WG1487404-5 MS		**L1146861-1**						
Nitrobenzene			83.5		%		50-140	13-JUN-12
Pentachlorophenol			90.7		%		50-140	13-JUN-12
Perylene			89.5		%		50-140	13-JUN-12
Phenol			80.7		%		50-140	13-JUN-12
B-HWS-R511-WT	**Soil**							
Batch R2365342								
WG1471983-4 DUP		**WG1471983-3**						
Boron (B), Hot Water Ext.		0.11	0.11		ug/g	2.8	40	15-MAY-12
WG1471983-2 LCS								
Boron (B), Hot Water Ext.			84.9		%		70-130	15-MAY-12
WG1471983-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	15-MAY-12
WG1471983-5 MS		**WG1471983-3**						
Boron (B), Hot Water Ext.			79.4		%		60-140	15-MAY-12
CN-WAD-R511-WT	**Soil**							
Batch R2366011								
WG1472074-3 CVS								
Cyanide, Weak Acid Diss			105.0		%		80-120	15-MAY-12
WG1471872-3 DUP		**L1146757-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	15-MAY-12
WG1471872-2 LCS								
Cyanide, Weak Acid Diss			95.5		%		80-120	15-MAY-12
WG1471872-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	15-MAY-12
WG1471872-4 MS		**L1146757-1**						
Cyanide, Weak Acid Diss			101		%		70-130	15-MAY-12
CR-CR6-IC-R511-WT	**Soil**							
Batch R2366122								
WG1471934-3 DUP		**L1146757-1**						
Chromium, Hexavalent		0.24	0.25		ug/g	3.9	35	15-MAY-12
WG1471934-2 LCS								
Chromium, Hexavalent			99.6		%		80-120	15-MAY-12
WG1471934-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	15-MAY-12
WG1471934-4 MS		**L1146757-1**						
Chromium, Hexavalent			96.0		%		70-130	15-MAY-12

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Quality Control Report

Workorder: L1146861 Report Date: 17-AUG-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-R511-WT	**Soil**							
Batch R2365486								
WG1471985-2 DUP		**L1146965-5**						
Conductivity		0.201	0.212		mS/cm	5.3	20	15-MAY-12
WG1472129-1 LCS								
Conductivity			98.7		%		90-110	15-MAY-12
WG1471985-1 MB								
Conductivity			<0.0040		mS/cm		0.004	15-MAY-12
HG-R511-WT	**Soil**							
Batch R2365187								
WG1471959-2 CRM		**WT-SS-1**						
Mercury (Hg)			102.4		%		70-130	15-MAY-12
WG1471959-4 DUP		**WG1471959-3**						
Mercury (Hg)		<0.010	<0.010	RPD-NA	ug/g	N/A	30	15-MAY-12
WG1471959-7 LCS								
Mercury (Hg)			100.0		%		80-120	15-MAY-12
WG1471959-1 MB								
Mercury (Hg)			<0.010		ug/g		0.01	15-MAY-12
WG1471959-5 MS		**WG1471959-3**						
Mercury (Hg)			94.0		%		70-130	15-MAY-12
MET-UG/G-CCMS-WT	**Soil**							
Batch R2365891								
WG1472001-2 CVS								
Antimony (Sb)			97.3		%		70-130	15-MAY-12
Arsenic (As)			99.2		%		70-130	15-MAY-12
Barium (Ba)			101.5		%		70-130	15-MAY-12
Beryllium (Be)			99.9		%		70-130	15-MAY-12
Boron (B)			110.3		%		70-130	15-MAY-12
Cadmium (Cd)			104.2		%		70-130	15-MAY-12
Chromium (Cr)			99.1		%		70-130	15-MAY-12
Cobalt (Co)			98.8		%		70-130	15-MAY-12
Copper (Cu)			99.3		%		70-130	15-MAY-12
Lead (Pb)			96.5		%		70-130	15-MAY-12
Molybdenum (Mo)			99.6		%		70-130	15-MAY-12
Nickel (Ni)			100.2		%		70-130	15-MAY-12
Selenium (Se)			101.2		%		70-130	15-MAY-12
Silver (Ag)			98.4		%		70-130	15-MAY-12
Thallium (Tl)			99.3		%		70-130	15-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	**Soil**							
Batch R2365891								
WG1472001-2 CVS								
Uranium (U)			91.8		%		70-130	15-MAY-12
Vanadium (V)			99.0		%		70-130	15-MAY-12
Zinc (Zn)			92.5		%		70-130	15-MAY-12
WG1471959-4 DUP		**WG1471959-3**						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	15-MAY-12
Arsenic (As)		2.39	2.30		ug/g	4.0	30	15-MAY-12
Barium (Ba)		36.3	34.4		ug/g	5.2	40	15-MAY-12
Beryllium (Be)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	15-MAY-12
Boron (B)		8.7	8.2		ug/g	5.1	30	15-MAY-12
Cadmium (Cd)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	15-MAY-12
Chromium (Cr)		11.3	10.6		ug/g	6.4	30	15-MAY-12
Cobalt (Co)		4.4	4.3		ug/g	1.3	30	15-MAY-12
Copper (Cu)		19.5	18.9		ug/g	3.0	30	15-MAY-12
Lead (Pb)		7.8	7.6		ug/g	3.4	40	15-MAY-12
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	15-MAY-12
Nickel (Ni)		8.9	8.6		ug/g	3.6	30	15-MAY-12
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	15-MAY-12
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	15-MAY-12
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	15-MAY-12
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	15-MAY-12
Vanadium (V)		19.6	19.1		ug/g	2.6	30	15-MAY-12
Zinc (Zn)		47.4	46.0		ug/g	2.9	30	15-MAY-12
WG1471959-6 LCS								
Antimony (Sb)			90.6		%		80-120	15-MAY-12
Arsenic (As)			101.3		%		80-120	15-MAY-12
Barium (Ba)			99.9		%		80-120	15-MAY-12
Beryllium (Be)			99.4		%		80-120	15-MAY-12
Boron (B)			108.3		%		80-120	15-MAY-12
Cadmium (Cd)			98.7		%		80-120	15-MAY-12
Chromium (Cr)			100.7		%		80-120	15-MAY-12
Cobalt (Co)			98.7		%		80-120	15-MAY-12
Copper (Cu)			97.5		%		80-120	15-MAY-12
Lead (Pb)			98.1		%		80-120	15-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	**Soil**							
Batch R2365891								
WG1471959-6 LCS								
Molybdenum (Mo)			99.2		%		80-120	15-MAY-12
Nickel (Ni)			98.9		%		80-120	15-MAY-12
Selenium (Se)			99.8		%		80-120	15-MAY-12
Silver (Ag)			96.4		%		80-120	15-MAY-12
Thallium (Tl)			99.3		%		80-120	15-MAY-12
Uranium (U)			95.8		%		80-120	15-MAY-12
Vanadium (V)			101.3		%		80-120	15-MAY-12
Zinc (Zn)			98.6		%		80-120	15-MAY-12
WG1471959-1 MB								
Antimony (Sb)			<1.0		ug/g		1	15-MAY-12
Arsenic (As)			<0.20		ug/g		0.2	15-MAY-12
Barium (Ba)			<1.0		ug/g		1	15-MAY-12
Beryllium (Be)			<0.50		ug/g		0.5	15-MAY-12
Boron (B)			<5.0		ug/g		5	15-MAY-12
Cadmium (Cd)			<0.50		ug/g		0.5	15-MAY-12
Chromium (Cr)			<1.0		ug/g		1	15-MAY-12
Cobalt (Co)			<1.0		ug/g		1	15-MAY-12
Copper (Cu)			<1.0		ug/g		1	15-MAY-12
Lead (Pb)			<1.0		ug/g		1	15-MAY-12
Molybdenum (Mo)			<1.0		ug/g		1	15-MAY-12
Nickel (Ni)			<1.0		ug/g		1	15-MAY-12
Selenium (Se)			<1.0		ug/g		1	15-MAY-12
Silver (Ag)			<0.20		ug/g		0.2	15-MAY-12
Thallium (Tl)			<0.50		ug/g		0.5	15-MAY-12
Uranium (U)			<1.0		ug/g		1	15-MAY-12
Vanadium (V)			<1.0		ug/g		1	15-MAY-12
Zinc (Zn)			<5.0		ug/g		5	15-MAY-12
WG1471959-5 MS		**WG1471959-3**						
Antimony (Sb)			80.1		%		70-130	15-MAY-12
Arsenic (As)			97.9		%		70-130	15-MAY-12
Barium (Ba)			N/A	MS-B	%		-	15-MAY-12
Beryllium (Be)			110.8		%		70-130	15-MAY-12
Boron (B)			N/A	MS-B	%		-	15-MAY-12
Cadmium (Cd)			102.2		%		70-130	15-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	**Soil**							
Batch R2365891								
WG1471959-5 MS		**WG1471959-3**						
Chromium (Cr)			N/A	MS-B	%		-	15-MAY-12
Cobalt (Co)			N/A	MS-B	%		-	15-MAY-12
Copper (Cu)			N/A	MS-B	%		-	15-MAY-12
Lead (Pb)			N/A	MS-B	%		-	15-MAY-12
Molybdenum (Mo)			105.7		%		70-130	15-MAY-12
Nickel (Ni)			N/A	MS-B	%		-	15-MAY-12
Selenium (Se)			98.2		%		70-130	15-MAY-12
Silver (Ag)			91.1		%		70-130	15-MAY-12
Thallium (Tl)			92.5		%		70-130	15-MAY-12
Uranium (U)			105.4		%		70-130	15-MAY-12
Vanadium (V)			N/A	MS-B	%		-	15-MAY-12
Zinc (Zn)			N/A	MS-B	%		-	15-MAY-12
MOISTURE-WT	**Soil**							
Batch R2365164								
WG1471955-3 DUP		**L1146948-10**						
% Moisture		39.7	40.4		%	1.9	30	14-MAY-12
WG1471955-2 LCS								
% Moisture			98.4		%		70-130	14-MAY-12
WG1471955-1 MB								
% Moisture			<0.10		%		0.1	14-MAY-12
PAH-511-WT	**Soil**							
Batch R2365304								
WG1472030-1 CVS								
1-Methylnaphthalene			96.7		%		50-140	15-MAY-12
2-Methylnaphthalene			92.2		%		50-140	15-MAY-12
Acenaphthene			95.6		%		50-140	15-MAY-12
Acenaphthylene			96.9		%		50-140	15-MAY-12
Anthracene			98.8		%		50-140	15-MAY-12
Benzo(a)anthracene			102.9		%		50-140	15-MAY-12
Benzo(a)pyrene			95.4		%		50-140	15-MAY-12
Benzo(b)fluoranthene			90.4		%		50-150	15-MAY-12
Benzo(g,h,i)perylene			101.6		%		50-140	15-MAY-12
Benzo(k)fluoranthene			109.5		%		50-140	15-MAY-12
Chrysene			97.8		%		50-140	15-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R2365304								
WG1472030-1 CVS								
Dibenzo(ah)anthracene			102.6		%		50-140	15-MAY-12
Fluoranthene			99.9		%		50-140	15-MAY-12
Fluorene			95.4		%		50-140	15-MAY-12
Indeno(1,2,3-cd)pyrene			107.0		%		50-140	15-MAY-12
Naphthalene			91.0		%		50-140	15-MAY-12
Phenanthrene			97.7		%		50-140	15-MAY-12
Pyrene			97.5		%		50-140	15-MAY-12
WG1472002-6 DUP		**L1146806-8**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-MAY-12
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-MAY-12
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-MAY-12
WG1472002-2 LCS								
1-Methylnaphthalene			97.2		%		50-140	15-MAY-12
2-Methylnaphthalene			93.3		%		50-140	15-MAY-12
Acenaphthene			98.7		%		50-140	15-MAY-12
Acenaphthylene			101.6		%		50-140	15-MAY-12
Anthracene			96.8		%		50-140	15-MAY-12
Benzo(a)anthracene			99.8		%		50-140	15-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R2365304								
WG1472002-2 LCS								
Benzo(a)pyrene			93.2		%		50-140	15-MAY-12
Benzo(b)fluoranthene			95.3		%		50-150	15-MAY-12
Benzo(g,h,i)perylene			100.2		%		50-140	15-MAY-12
Benzo(k)fluoranthene			96.4		%		50-140	15-MAY-12
Chrysene			96.8		%		50-140	15-MAY-12
Dibenzo(ah)anthracene			101.3		%		50-140	15-MAY-12
Fluoranthene			97.4		%		50-140	15-MAY-12
Fluorene			99.5		%		50-140	15-MAY-12
Indeno(1,2,3-cd)pyrene			108.2		%		50-140	15-MAY-12
Naphthalene			90.7		%		50-140	15-MAY-12
Phenanthrene			95.1		%		50-140	15-MAY-12
Pyrene			95.2		%		50-140	15-MAY-12
WG1472002-3 LCSD		**WG1472002-2**						
1-Methylnaphthalene		97.2	95.3		%	2.0	50	15-MAY-12
2-Methylnaphthalene		93.3	91.9		%	1.5	50	15-MAY-12
Acenaphthene		98.7	96.5		%	2.2	50	15-MAY-12
Acenaphthylene		101.6	99.5		%	2.1	50	15-MAY-12
Anthracene		96.8	95.6		%	1.2	50	15-MAY-12
Benzo(a)anthracene		99.8	98.6		%	1.2	50	15-MAY-12
Benzo(a)pyrene		93.2	92.6		%	0.7	50	15-MAY-12
Benzo(b)fluoranthene		95.3	83.8		%	13	50	15-MAY-12
Benzo(g,h,i)perylene		100.2	98.9		%	1.3	50	15-MAY-12
Benzo(k)fluoranthene		96.4	94.0		%	2.6	50	15-MAY-12
Chrysene		96.8	96.2		%	0.6	50	15-MAY-12
Dibenzo(ah)anthracene		101.3	98.5		%	2.8	50	15-MAY-12
Fluoranthene		97.4	95.4		%	2.1	50	15-MAY-12
Fluorene		99.5	97.4		%	2.1	50	15-MAY-12
Indeno(1,2,3-cd)pyrene		108.2	105.2		%	2.8	50	15-MAY-12
Naphthalene		90.7	88.9		%	1.9	50	15-MAY-12
Phenanthrene		95.1	94.1		%	1.1	50	15-MAY-12
Pyrene		95.2	94.0		%	1.3	50	15-MAY-12
WG1472002-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	15-MAY-12

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Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R2365304								
WG1472002-1 MB								
2-Methylnaphthalene			<0.030		ug/g		0.03	15-MAY-12
Acenaphthene			<0.050		ug/g		0.05	15-MAY-12
Acenaphthylene			<0.050		ug/g		0.05	15-MAY-12
Anthracene			<0.050		ug/g		0.05	15-MAY-12
Benzo(a)anthracene			<0.050		ug/g		0.05	15-MAY-12
Benzo(a)pyrene			<0.050		ug/g		0.05	15-MAY-12
Benzo(b)fluoranthene			<0.050		ug/g		0.05	15-MAY-12
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	15-MAY-12
Benzo(k)fluoranthene			<0.050		ug/g		0.05	15-MAY-12
Chrysene			<0.050		ug/g		0.05	15-MAY-12
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	15-MAY-12
Fluoranthene			<0.050		ug/g		0.05	15-MAY-12
Fluorene			<0.050		ug/g		0.05	15-MAY-12
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	15-MAY-12
Naphthalene			<0.050		ug/g		0.05	15-MAY-12
Phenanthrene			<0.050		ug/g		0.05	15-MAY-12
Pyrene			<0.050		ug/g		0.05	15-MAY-12
Surrogate: 2-Fluorobiphenyl			94.8		%		50-140	15-MAY-12
Surrogate: p-Terphenyl d14			89.0		%		50-140	15-MAY-12
WG1472002-7 MS		**L1146806-8**						
1-Methylnaphthalene			100.1		%		50-140	15-MAY-12
2-Methylnaphthalene			98.4		%		50-140	15-MAY-12
Acenaphthene			102.8		%		50-140	15-MAY-12
Acenaphthylene			102.7		%		50-140	15-MAY-12
Anthracene			101.4		%		50-140	15-MAY-12
Benzo(a)anthracene			104.9		%		50-140	15-MAY-12
Benzo(a)pyrene			98.1		%		50-140	15-MAY-12
Benzo(b)fluoranthene			90.5		%		50-150	15-MAY-12
Benzo(g,h,i)perylene			105.6		%		50-140	15-MAY-12
Benzo(k)fluoranthene			99.6		%		50-140	15-MAY-12
Chrysene			102.1		%		50-140	15-MAY-12
Dibenzo(ah)anthracene			105.8		%		50-140	15-MAY-12
Fluoranthene			102.0		%		50-140	15-MAY-12
Fluorene			102.9		%		50-140	15-MAY-12

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Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R2365304								
WG1472002-7 MS		**L1146806-8**						
Indeno(1,2,3-cd)pyrene			114.0		%		50-140	15-MAY-12
Naphthalene			92.6		%		50-140	15-MAY-12
Phenanthrene			99.2		%		50-140	15-MAY-12
Pyrene			100.5		%		50-140	15-MAY-12
PCB-511-WT	**Soil**							
Batch R2381348								
WG1488913-1 CVS								
Aroclor 1242			89.5		%		60-140	12-JUN-12
Aroclor 1248			100.8		%		60-140	12-JUN-12
Aroclor 1254			94.2		%		60-140	12-JUN-12
Aroclor 1260			99.2		%		60-140	12-JUN-12
WG1486934-4 DUP		**L1146861-1**						
Aroclor 1242		<0.025	<0.025	RPD-NA	ug/g	N/A	40	12-JUN-12
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	12-JUN-12
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	12-JUN-12
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	12-JUN-12
WG1486934-2 LCS								
Aroclor 1242			97.2		%		60-140	12-JUN-12
Aroclor 1248			111.3		%		60-140	12-JUN-12
Aroclor 1254			96.4		%		60-140	12-JUN-12
Aroclor 1260			98.2		%		60-140	12-JUN-12
WG1486934-3 LCSD		**WG1486934-2**						
Aroclor 1242		97.2	90.6		%	7.1	50	12-JUN-12
Aroclor 1248		111.3	111.3		%	0.0	50	12-JUN-12
Aroclor 1254		96.4	88.8		%	8.1	50	12-JUN-12
Aroclor 1260		98.2	93.7		%	4.6	50	12-JUN-12
WG1486934-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	12-JUN-12
Aroclor 1248			<0.010		ug/g		0.01	12-JUN-12
Aroclor 1254			<0.010		ug/g		0.01	12-JUN-12
Aroclor 1260			<0.010		ug/g		0.01	12-JUN-12
Surrogate: d14-Terphenyl			129.1		%		60-140	12-JUN-12
WG1486934-5 MS		**L1146861-1**						
Aroclor 1242			93.9		%		60-140	12-JUN-12

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Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	**Soil**							
Batch R2381348								
WG1486934-5 MS		**L1146861-1**						
Aroclor 1254			103.3		%		60-140	12-JUN-12
Aroclor 1260			109.9		%		60-140	12-JUN-12
PH-R511-WT	**Soil**							
Batch R2365857								
WG1472499-2 DUP		**L1145909-1**						
pH		8.09	8.18		pH units	1.1	20	15-MAY-12
WG1472499-3 DUP		**L1147021-1**						
pH		7.70	7.69		pH units	0.1	20	15-MAY-12
WG1472499-1 LCS								
pH			6.99		pH units		6.7-7.3	15-MAY-12
VOC-511-HS-WT	**Soil**							
Batch R2365176								
WG1468506-1 CVS								
1,1,1,2-Tetrachloroethane			102.8		%		75-125	14-MAY-12
1,1,2,2-Tetrachloroethane			99.7		%		75-125	14-MAY-12
1,1,1-Trichloroethane			93.1		%		75-125	14-MAY-12
1,1,2-Trichloroethane			101.8		%		75-125	14-MAY-12
1,1-Dichloroethane			93.4		%		75-125	14-MAY-12
1,1-Dichloroethylene			86.8		%		75-125	14-MAY-12
1,2-Dibromoethane			100.8		%		75-125	14-MAY-12
1,2-Dichlorobenzene			100.7		%		75-125	14-MAY-12
1,2-Dichloroethane			87.3		%		75-125	14-MAY-12
1,2-Dichloropropane			101.3		%		75-125	14-MAY-12
1,3-Dichlorobenzene			100.6		%		70-130	14-MAY-12
1,4-Dichlorobenzene			98.9		%		75-125	14-MAY-12
Acetone			102.6		%		70-130	14-MAY-12
Benzene			91.7		%		75-125	14-MAY-12
Bromodichloromethane			99.0		%		75-125	14-MAY-12
Bromoform			99.3		%		75-125	14-MAY-12
Bromomethane			80.5		%		70-130	14-MAY-12
Carbon tetrachloride			91.5		%		75-125	14-MAY-12
Chlorobenzene			95.4		%		75-125	14-MAY-12
Chloroform			94.8		%		75-125	14-MAY-12
cis-1,2-Dichloroethylene			99.9		%		75-125	14-MAY-12

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Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R2365176								
WG1468506-1 CVS								
cis-1,3-Dichloropropene			94.0		%		75-125	14-MAY-12
Dibromochloromethane			102.0		%		75-125	14-MAY-12
Dichlorodifluoromethane			68.3	G	%		70-130	14-MAY-12
Ethyl Benzene			100.4		%		75-125	14-MAY-12
n-Hexane			87.1		%		75-125	14-MAY-12
Methylene Chloride			92.8		%		75-125	14-MAY-12
MTBE			99.4		%		75-125	14-MAY-12
m+p-Xylenes			102.6		%		70-130	14-MAY-12
Methyl Ethyl Ketone			99.96		%		70-130	14-MAY-12
Methyl Isobutyl Ketone			100.2		%		70-130	14-MAY-12
o-Xylene			101.2		%		75-125	14-MAY-12
Styrene			99.0		%		75-125	14-MAY-12
Tetrachloroethylene			101.8		%		75-125	14-MAY-12
Toluene			101.4		%		75-125	14-MAY-12
trans-1,2-Dichloroethylene			92.4		%		75-125	14-MAY-12
trans-1,3-Dichloropropene			97.1		%		75-125	14-MAY-12
Trichloroethylene			92.1		%		70-130	14-MAY-12
Trichlorofluoromethane			95.9		%		70-130	14-MAY-12
Vinyl chloride			88.5		%		70-130	14-MAY-12
COMMENTS: Due to the number of analytes, 10% can exceed QC limits. Analyte(s) not present in related samples.								
WG1471660-4 DUP		**WG1471660-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	50	15-MAY-12

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Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R2365176								
WG1471660-4 DUP		**WG1471660-3**						
Benzene		<0.020	<0.020	RPD-NA	ug/g	N/A	50	15-MAY-12
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	50	15-MAY-12
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Ethyl Benzene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	50	15-MAY-12
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	50	15-MAY-12
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	50	15-MAY-12
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	50	15-MAY-12
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Toluene		<0.20	<0.20	RPD-NA	ug/g	N/A	50	15-MAY-12
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-MAY-12
Trichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	50	15-MAY-12
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	50	15-MAY-12
WG1471660-2 LCS								
1,1,1,2-Tetrachloroethane			101.0		%		60-130	15-MAY-12
1,1,2,2-Tetrachloroethane			105.0		%		60-130	15-MAY-12
1,1,1-Trichloroethane			98.3		%		60-130	15-MAY-12
1,1,2-Trichloroethane			100.0		%		60-130	15-MAY-12
1,1-Dichloroethane			96.2		%		60-130	15-MAY-12

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Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R2365176								
WG1471660-2 LCS								
1,1-Dichloroethylene			107.1		%		60-130	15-MAY-12
1,2-Dibromoethane			97.8		%		60-130	15-MAY-12
1,2-Dichlorobenzene			95.5		%		60-130	15-MAY-12
1,2-Dichloroethane			95.3		%		60-130	15-MAY-12
1,2-Dichloropropane			97.2		%		60-130	15-MAY-12
1,3-Dichlorobenzene			93.5		%		60-130	15-MAY-12
1,4-Dichlorobenzene			98.1		%		60-130	15-MAY-12
Acetone			123.5		%		50-140	15-MAY-12
Benzene			91.7		%		60-130	15-MAY-12
Bromodichloromethane			113.3		%		50-140	15-MAY-12
Bromoform			107.9		%		60-130	15-MAY-12
Bromomethane			101.4		%		50-140	15-MAY-12
Carbon tetrachloride			100.7		%		60-130	15-MAY-12
Chlorobenzene			89.1		%		60-130	15-MAY-12
Chloroform			98.7		%		60-130	15-MAY-12
cis-1,2-Dichloroethylene			109.3		%		60-130	15-MAY-12
cis-1,3-Dichloropropene			104.5		%		60-130	15-MAY-12
Dibromochloromethane			109.9		%		60-130	15-MAY-12
Dichlorodifluoromethane			81.0		%		50-140	15-MAY-12
Ethyl Benzene			93.7		%		60-130	15-MAY-12
n-Hexane			90.4		%		60-130	15-MAY-12
Methylene Chloride			110.4		%		60-130	15-MAY-12
MTBE			100.9		%		60-130	15-MAY-12
m+p-Xylenes			97.4		%		60-130	15-MAY-12
Methyl Ethyl Ketone			106.6		%		50-140	15-MAY-12
Methyl Isobutyl Ketone			103.0		%		50-140	15-MAY-12
o-Xylene			87.6		%		60-130	15-MAY-12
Styrene			93.7		%		60-130	15-MAY-12
Tetrachloroethylene			103.0		%		60-130	15-MAY-12
Toluene			95.0		%		60-130	15-MAY-12
trans-1,2-Dichloroethylene			104.3		%		60-130	15-MAY-12
trans-1,3-Dichloropropene			93.0		%		60-130	15-MAY-12
Trichloroethylene			97.4		%		60-130	15-MAY-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R2365176								
WG1471660-2 LCS								
Trichlorofluoromethane			110.2		%		50-140	15-MAY-12
Vinyl chloride			112.0		%		60-130	15-MAY-12
WG1471660-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	15-MAY-12
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	15-MAY-12
1,1,1-Trichloroethane			<0.050		ug/g		0.05	15-MAY-12
1,1,2-Trichloroethane			<0.050		ug/g		0.05	15-MAY-12
1,1-Dichloroethane			<0.050		ug/g		0.05	15-MAY-12
1,1-Dichloroethylene			<0.050		ug/g		0.05	15-MAY-12
1,2-Dibromoethane			<0.050		ug/g		0.05	15-MAY-12
1,2-Dichlorobenzene			<0.050		ug/g		0.05	15-MAY-12
1,2-Dichloroethane			<0.050		ug/g		0.05	15-MAY-12
1,2-Dichloropropane			<0.050		ug/g		0.05	15-MAY-12
1,3-Dichlorobenzene			<0.050		ug/g		0.05	15-MAY-12
1,4-Dichlorobenzene			<0.050		ug/g		0.05	15-MAY-12
Acetone			<0.50		ug/g		0.5	15-MAY-12
Benzene			<0.020		ug/g		0.02	15-MAY-12
Bromodichloromethane			<0.050		ug/g		0.05	15-MAY-12
Bromoform			<0.050		ug/g		0.05	15-MAY-12
Bromomethane			<0.050		ug/g		0.05	15-MAY-12
Carbon tetrachloride			<0.050		ug/g		0.05	15-MAY-12
Chlorobenzene			<0.050		ug/g		0.05	15-MAY-12
Chloroform			<0.050		ug/g		0.05	15-MAY-12
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	15-MAY-12
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	15-MAY-12
Dibromochloromethane			<0.050		ug/g		0.05	15-MAY-12
Dichlorodifluoromethane			<0.050		ug/g		0.05	15-MAY-12
Ethyl Benzene			<0.050		ug/g		0.05	15-MAY-12
n-Hexane			<0.050		ug/g		0.05	15-MAY-12
Methylene Chloride			<0.050		ug/g		0.05	15-MAY-12
MTBE			<0.050		ug/g		0.05	15-MAY-12
m+p-Xylenes			<0.030		ug/g		0.03	15-MAY-12
Methyl Ethyl Ketone			<0.50		ug/g		0.5	15-MAY-12
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	15-MAY-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R2365176								
WG1471660-1 MB								
o-Xylene			<0.020		ug/g		0.02	15-MAY-12
Styrene			<0.050		ug/g		0.05	15-MAY-12
Tetrachloroethylene			<0.050		ug/g		0.05	15-MAY-12
Toluene			<0.20		ug/g		0.2	15-MAY-12
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	15-MAY-12
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	15-MAY-12
Trichloroethylene			<0.050		ug/g		0.05	15-MAY-12
Trichlorofluoromethane			<0.050		ug/g		0.05	15-MAY-12
Vinyl chloride			<0.020		ug/g		0.02	15-MAY-12
Surrogate: 1,4-Difluorobenzene			110.4		%		50-140	15-MAY-12
Surrogate: 4-Bromofluorobenzene			100.7		%		50-140	15-MAY-12
Surrogate: 3,4-Dichlorotoluene			132.1		%		50-140	15-MAY-12
WG1471660-5 MS		**WG1471660-3**						
1,1,1,2-Tetrachloroethane			107.1		%		50-140	15-MAY-12
1,1,2,2-Tetrachloroethane			134.8		%		50-140	15-MAY-12
1,1,1-Trichloroethane			83.4		%		50-140	15-MAY-12
1,1,2-Trichloroethane			131.3		%		50-140	15-MAY-12
1,1-Dichloroethane			94.8		%		50-140	15-MAY-12
1,1-Dichloroethylene			82.7		%		50-140	15-MAY-12
1,2-Dibromoethane			138.7		%		50-140	15-MAY-12
1,2-Dichlorobenzene			99.0		%		50-140	15-MAY-12
1,2-Dichloroethane			131.1		%		50-140	15-MAY-12
1,2-Dichloropropane			115.3		%		50-140	15-MAY-12
1,3-Dichlorobenzene			90.7		%		50-140	15-MAY-12
1,4-Dichlorobenzene			98.4		%		50-140	15-MAY-12
Acetone			207.7	RRR	%		50-140	15-MAY-12
Benzene			94.8		%		50-140	15-MAY-12
Bromodichloromethane			136.8		%		50-140	15-MAY-12
Bromoform			141.1	G	%		50-140	15-MAY-12
Bromomethane			98.4		%		50-140	15-MAY-12
Carbon tetrachloride			79.7		%		50-140	15-MAY-12
Chlorobenzene			91.1		%		50-140	15-MAY-12
Chloroform			104.9		%		50-140	15-MAY-12
cis-1,2-Dichloroethylene			121.3		%		50-140	15-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R2365176								
WG1471660-5 MS		**WG1471660-3**						
cis-1,3-Dichloropropene			121.2		%		50-140	15-MAY-12
Dibromochloromethane			136.8		%		50-140	15-MAY-12
Dichlorodifluoromethane			55.1		%		50-140	15-MAY-12
Ethyl Benzene			91.3		%		50-140	15-MAY-12
n-Hexane			55.8		%		50-140	15-MAY-12
Methylene Chloride			124.3		%		50-140	15-MAY-12
MTBE			101.6		%		50-140	15-MAY-12
m+p-Xylenes			88.6		%		50-140	15-MAY-12
Methyl Ethyl Ketone			206.7	RRR	%		50-140	15-MAY-12
Methyl Isobutyl Ketone			170.3	RRR	%		50-140	15-MAY-12
o-Xylene			89.2		%		50-140	15-MAY-12
Styrene			104.0		%		50-140	15-MAY-12
Tetrachloroethylene			85.0		%		50-140	15-MAY-12
Toluene			95.2		%		50-140	15-MAY-12
trans-1,2-Dichloroethylene			83.5		%		50-140	15-MAY-12
trans-1,3-Dichloropropene			111.6		%		50-140	15-MAY-12
Trichloroethylene			87.7		%		50-140	15-MAY-12
Trichlorofluoromethane			81.0		%		50-140	15-MAY-12
Vinyl chloride			93.6		%		50-140	15-MAY-12

COMMENTS: Matrix spike recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.

Quality Control Report

Workorder: L1146861 Report Date: 17-AUG-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
G	QC result did not meet ALS DQO. Refer to narrative comments for further information.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
RRR	Refer to Report Remarks for issues regarding this analysis

Quality Control Report

Workorder: L1146861 Report Date: 17-AUG-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Semi-Volatile Organics							
EPA 8270 Extractables							
	1	14-MAY-12 12:00	11-JUN-12 21:36	7	28	days	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1146861 were received on 14-MAY-12 15:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

124529

C of C # 00000

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8
Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878

ALS Environmental

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

Page 1 of 1

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date required

Service requested	
5 day (regular)	✓
3-4 day (25%)	
2 day TAT (50%)	
Next day TAT (100%)	
Same day TAT (200%)	

COMPANY NAME	Sal Engineers Ltd
OFFICE	Toronto
PROJECT MANAGER	Tharshan
PROJECT #	1204-5048E
PHONE	FAX
ACCOUNT #	
QUOTATION #	PO #

CRITERIA — Criteria on report YES ✓ NO ___

Reg 153/04 ☐ Reg 511/09 ☑ Table (1) 2 3 4 5 6 7 8 9

TCLP ___ MISA ___ PWQO ___ ODWS ___ OTHER ___

REPORT FORMAT/DISTRIBUTION

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EMAIL 2

PLEASE INDICATE FILTERED, PRESERVED OR BOTH ← (F, P, F/P)

SUBMISSION #: L1146861
ENTERED BY: MG1
DATE/TIME ENTERED: 14-MAY-12
BIN #: —

Sample (Date dd-mmm-yy)	Time (24hr) (hh:mm)	COMP	GRAB	WATER	SOIL	OTHER	Date (Sample description to appear on report)	Number of containers	Metals & Inorganics	PAHs	VOC	F1-F4 BTEX	VOC/F1 to F4	VOC's	Comments	Lab ID
BH1/3	12:00				✓		May 14 2012	2	✓	✓	✓					-1
BH1/5					✓		May 14 2012	3			✓					-2
DUP					✓		May 14 2012				✓					-3
BH3/2					✓		May 8 2012		✓							-4
BH3/8					✓		May 8 2012				✓	✓				-5
BH4/2					✓		May 8 2012		✓							-6
BH4/5					✓		May 8 2012				✓	✓				-7
BH2/6					✓		May 14, 12				✓				extra samples	-8
MW4				✓			May 14, 12		✓				✓		received	-9
MW3				✓			May 14, 12		✓				✓		15-MAY-12	-10
MW2				✓			May 15, 12		✓					X		-11
DUP2				✓												-12

SPECIAL INSTRUCTIONS/COMMENTS
*Changed Fr. 5 sample ID to BH 3/8 as per Tharshan

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK Yes OR No)
Are any samples taken from a regulated DW System? Yes ☐ No ✓
If yes, an authorized drinking water COC MUST be used for this submission.
Is the water sampled intended to be potable for human consumption? Yes ☐ No ✓

SAMPLE CONDITION
FROZEN ☐ COLD ✓ COOLING INITIATED ☐ AMBIENT ☐
MEAN TEMP 12°C
OBSERVATIONS Yes ☐ No ✓ If yes add SIF
INIT MG

SAMPLED BY: Tharshan	DATE & TIME May 14 2012	RECEIVED BY: [signature]	DATE & TIME 5/15/12
RELINQUISHED BY:	DATE & TIME	RECEIVED AT LAB BY: MG1	DATE & TIME 15-MAY-12 15:00

Notes
1. Quote number must be provided to ensure proper pricing.
2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

*removed VOC, F1 to F4 for MW2 added VOC's
*added [illegible] sample for VOC's MG1RH 16-MAY-12

124651

C of C # 00000

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8
Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878

ALS Environmental

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

Page 1 of 1

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date required	Service requested			
	5 day (regular)	✓	2 day TAT (50%)	
	3-4 day (25%)		Next day TAT (100%)	
			Same day TAT (200%)	

COMPANY NAME	Soil Engineers Ltd.
OFFICE	Toronto
PROJECT MANAGER	Theeshan Kumaleswaran
PROJECT #	1204-S048E
PHONE	FAX
ACCOUNT #	
QUOTATION #	PO #

CRITERIA — Criteria on report YES ✓ NO ___

Reg 153/04 ☐ Reg 511/09 ☑

Table 1 (2) 3 4 5 6 7 8 9

TCLP ___ MISA ___ PWQO ___
ODWS ___ OTHER ___

REPORT FORMAT/DISTRIBUTION

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EMAIL 2 ___

PLEASE INDICATE FILTERED, PRESERVED OR BOTH ← (F, P, F/P)

SUBMISSION #: L1146861-1
ENTERED BY: MG1
DATE/TIME ENTERED: 14-MAY-12
BIN #: B749

SAMPLING INFORMATION

Date (dd-mm-yy)	Time (24hr) (hh:mm)	COMP	GRAB	WATER	SOIL	OTHER	SAMPLE DESCRIPTION TO APPEAR ON REPORT	NUMBER OF CONTAINERS	BNAES	PCB	COMMENTS	LAB ID
May 14 2012	12:00	✓			✓		BH1/3		✓	✓		-1

SPECIAL INSTRUCTIONS/COMMENTS

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK Yes OR No)

Are any samples taken from a regulated DW System? Yes ☐ No ☑
If yes, an authorized drinking water COC MUST be used for this submission.
Is the water sampled intended to be potable for human consumption? Yes ☐ No ☑

SAMPLE CONDITION

FROZEN ☐
COLD ☑
COOLING INITIATED ☐
AMBIENT ☐
MEAN TEMP 10° C
OBSERVATIONS Yes ☐ No ☑
If yes add SIF
INIT [illegible]

SAMPLED BY: [signature]		DATE & TIME May 14 2012	RECEIVED BY:	DATE & TIME	
RELINQUISHED BY:		DATE & TIME	RECEIVED AT LAB BY: MG1	DATE & TIME: 08-JUN-12 13:55	

Notes:
1. Quote number must be provided to ensure proper pricing
2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
100 NUGGET AVENUE, TORONTO, ONTARIO M1S 3A7 • TEL: (416) 754-8515 • FAX: (416) 754-8516

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TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (705) 748-0576	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (416) 754-8516	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

APPENDIX 'C'

CERTIFICATES OF ANALYSES

(SOIL SAMPLES , QA/QC SOIL SAMPLE, GROUNDWATER SAMPLES AND QA/QC GROUNDWATER SAMPLE FOR COMMUNITY LAND, TABLE 2)

REFERENCE NO. 1204-S048E

Soil Engineers Ltd.
ATTN: THARSHAN KAMALESWARAN
100 NUGGET AVENUE
TORONTO ON M1S 3A7

Date Received: 14-MAY-12
Report Date: 14-JUN-12 14:05 (MT)
Version: FINAL REV. 4

Client Phone: 416-754-8515

Certificate of Analysis

Lab Work Order #: L1146861

Project P.O. #: NOT SUBMITTED
Job Reference: 1204-S048E
C of C Numbers: 124529
Legal Site Desc:

Comments: ADDITIONAL 08-JUN-12 12:25

14-JUN-12: Additional TCLP analysis: Results included

MATHUMAI GANESHKUMAR
Account Manager

ANALYTICAL REPORT

WATER - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

			ALS ID	L1146861-9	L1146861-10	L1146861-11	L1146861-12
			Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	14-MAY-12
			Sampled Time	-	-	-	-
			Sample ID	MW4	MW3	MW2	DUP2
Grouping	Analyte	Unit	Guide Limits #1	#2			
Physical Tests	Conductivity	mS/cm	-	-	1.12	[redacted]	
	pH	pH units	-	-	7.75		
Anions and Nutrients	Chloride (Cl)	mg/L	790	790	173		
Cyanides	Cyanide, Weak Acid Diss	ug/L	66	66	<2.0		
Dissolved Metals	Antimony (Sb)	ug/L	6	6	<0.50		
	Arsenic (As)	ug/L	25	25	2.5		
	Barium (Ba)	ug/L	1000	1000	119		
	Beryllium (Be)	ug/L	4	4	<0.50		
	Boron (B)	ug/L	5000	5000	34		
	Cadmium (Cd)	ug/L	2.7	2.7	<0.10		
	Chromium (Cr)	ug/L	50	50	<0.50		
	Cobalt (Co)	ug/L	3.8	3.8	<0.50		
	Copper (Cu)	ug/L	87	87	1.1		
	Lead (Pb)	ug/L	10	10	<1.0		
	Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.10		
	Molybdenum (Mo)	ug/L	70	70	6.23		
	Nickel (Ni)	ug/L	100	100	<1.0		
	Selenium (Se)	ug/L	10	10	<5.0		
	Silver (Ag)	ug/L	1.5	1.5	<0.10		
	Sodium (Na)	ug/L	490000	490000	87100 DLM		
	Thallium (Tl)	ug/L	2	2	<0.30		
	Uranium (U)	ug/L	20	20	<2.0		

Guide Limit #1: ON511/11-T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: ON511/11-T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

WATER - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-9	L1146861-10	L1146861-11	L1146861-12
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	14-MAY-12
					Sampled Time	-	-	-	-
					Sample ID	MW4	MW3	MW2	DUP2
Grouping	Analyte	Unit	Guide Limits #1	#2					
Dissolved Metals	Vanadium (V)	ug/L	6.2	6.2		0.95	[redacted]		
	Zinc (Zn)	ug/L	1100	1100		<3.0			
Speciated Metals	Chromium, Hexavalent	ug/L	25	25		<10			
Volatile Organic Compounds	Acetone	ug/L	2700	2700		<30			
	Benzene	ug/L	5	5		<0.50			
	Bromodichloromethane	ug/L	16	16		<2.0			
	Bromoform	ug/L	25	25		<5.0			
	Bromomethane	ug/L	0.89	0.89		<0.50			
	Carbon tetrachloride	ug/L	0.79	5		<0.20			
	Chlorobenzene	ug/L	30	30		<0.50			
	Dibromochloromethane	ug/L	25	25		<2.0			
	Chloroform	ug/L	2.4	22		<1.0			
	1,2-Dibromoethane	ug/L	0.2	0.2		<0.20			
	1,2-Dichlorobenzene	ug/L	3	3		<0.50			
	1,3-Dichlorobenzene	ug/L	59	59		<0.50			
	1,4-Dichlorobenzene	ug/L	1	1		<0.50			
	Dichlorodifluoromethane	ug/L	590	590		<2.0			
	1,1-Dichloroethane	ug/L	5	5		<0.50			
	1,2-Dichloroethane	ug/L	1.6	5		<0.50			
	1,1-Dichloroethylene	ug/L	1.6	14		<0.50			
	cis-1,2-Dichloroethylene	ug/L	1.6	17		<0.50			
	trans-1,2-Dichloroethylene	ug/L	1.6	17		<0.50			

Guide Limit #1: ON511/11-T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: ON511/11-T2-Ground Water (Fine Soil)-All Types of Property Use
Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

WATER - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-9	L1146861-10	L1146861-11	L1146861-12
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	14-MAY-12
					Sampled Time	-	-	-	-
					Sample ID	MW4	MW3	MW2	DUP2
Grouping	Analyte	Unit	Guide Limits #1	#2					
Volatile Organic Compounds	1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5		<0.50	[redacted]		
	Methylene Chloride	ug/L	50	50		<5.0			
	1,2-Dichloropropane	ug/L	5	5		<0.50			
	cis-1,3-Dichloropropene	ug/L	-	-		<0.30			
	trans-1,3-Dichloropropene	ug/L	-	-		<0.30			
	Ethyl Benzene	ug/L	2.4	2.4		<0.50			
	n-Hexane	ug/L	51	520		<0.50			
	Methyl Ethyl Ketone	ug/L	1800	1800		<20			
	Methyl Isobutyl Ketone	ug/L	640	640		<20			
	MTBE	ug/L	15	15		<2.0			
	Styrene	ug/L	5.4	5.4		<0.50			
	1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1		<0.50			
	1,1,2,2-Tetrachloroethane	ug/L	1	1		<0.50			
	Tetrachloroethylene	ug/L	1.6	17		<0.50			
	Toluene	ug/L	24	24		0.79			
	1,1,1-Trichloroethane	ug/L	200	200		<0.50			
	1,1,2-Trichloroethane	ug/L	4.7	5		<0.50			
	Trichloroethylene	ug/L	1.6	5		1.77			
	Trichlorofluoromethane	ug/L	150	150		<5.0			
	Vinyl chloride	ug/L	0.5	1.7		<0.50			
	o-Xylene	ug/L	-	-		<0.35			
	m+p-Xylenes	ug/L	-	-		<0.35			

Guide Limit #1: ON511/11-T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: ON511/11-T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

WATER - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-9	L1146861-10	L1146861-11	L1146861-12
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	14-MAY-12
					Sampled Time	-	-	-	-
					Sample ID	MW4	MW3	MW2	DUP2
Grouping	Analyte	Unit	Guide Limits #1	#2					
Volatile Organic Compounds	Xylenes (Total)	ug/L	300	300		<0.50	[redacted]		
	Surrogate: 4-Bromofluorobenzene	%	-	-		95.9			
	Surrogate: 1,2-Dichloroethane d4	%	-	-		113.5			
	Surrogate: Toluene-d8	%	-	-		98.3			
Hydrocarbons	F1 (C6-C10)	ug/L	750	750		89			
	F1-BTEX	ug/L	750	750		88			
	F2 (C10-C16)	ug/L	150	150		<100			
	F3 (C16-C34)	ug/L	500	500		<250			
	F4 (C34-C50)	ug/L	500	500		<250			
	Total Hydrocarbons (C6-C50)	ug/L	-	-		<250			
	Chrom. to baseline at nC50		-	-		YES			
	Surrogate: 2-Bromobenzotrifluoride	%	-	-		79.6			
	Surrogate: Octacosane	%	-	-		91.8			

Guide Limit #1: ON511/11-T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: ON511/11-T2-Ground Water (Fine Soil)-All Types of Property Use
Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/8	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	Guide Limits #1	#2									
Physical Tests	Conductivity	mS/cm	1.4	1.4		2.32			[redacted]		0.307		[redacted]
	% Moisture	%	-	-		21.2	58.6	52.3			14.5	17.6	
	pH	pH units	-	-		7.33					7.48		
Cyanides	Cyanide, Weak Acid Diss	ug/g	0.051	0.051		<0.050					<0.050		
Saturated Paste Extractables	SAR	SAR	12	12		10.7					2.91		
Metals	Antimony (Sb)	ug/g	40	50		<1.0					<1.0		
	Arsenic (As)	ug/g	18	18		1.6					2.1		
	Barium (Ba)	ug/g	670	670		81.9					61.6		
	Beryllium (Be)	ug/g	8	10		<0.50					<0.50		
	Boron (B)	ug/g	120	120		5.9					8.1		
	Boron (B), Hot Water Ext.	ug/g	2	2		0.66					<0.10		
	Cadmium (Cd)	ug/g	1.9	1.9		0.65					<0.50		
	Chromium (Cr)	ug/g	160	160		11.4					17.2		
	Cobalt (Co)	ug/g	80	100		3.0					5.2		
	Copper (Cu)	ug/g	230	300		10.0					10.0		
	Lead (Pb)	ug/g	120	120		25.2					5.2		
	Mercury (Hg)	ug/g	3.9	20		0.111					0.018		
	Molybdenum (Mo)	ug/g	40	40		<1.0					<1.0		
	Nickel (Ni)	ug/g	270	340		6.3					10.7		
	Selenium (Se)	ug/g	5.5	5.5		<1.0					<1.0		
	Silver (Ag)	ug/g	40	50		<0.20					<0.20		
	Thallium (Tl)	ug/g	3.3	3.3		<0.50					<0.50		

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/8	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	Guide Limits #1	#2									
Metals	Uranium (U)	ug/g	33	33		<1.0					<1.0		
	Vanadium (V)	ug/g	86	86		17.7					30.1		
	Zinc (Zn)	ug/g	340	340		138					29.6		
Speciated Metals	Chromium, Hexavalent	ug/g	8	10		<0.20					<0.20		
Volatile Organic Compounds	Acetone	ug/g	16	28			DLHM <0.75	DLHM <0.75				<0.50	
	Benzene	ug/g	0.32	0.4			DLHM <0.030	DLHM <0.030				<0.020	
	Bromodichloromethane	ug/g	1.5	1.9			DLHM <0.075	DLHM <0.075				<0.050	
	Bromoform	ug/g	0.61	1.7			DLHM <0.075	DLHM <0.075				<0.050	
	Bromomethane	ug/g	0.05	0.05			DLHM <0.075	DLHM <0.075				<0.050	
	Carbon tetrachloride	ug/g	0.21	0.71			DLHM <0.075	DLHM <0.075				<0.050	
	Chlorobenzene	ug/g	2.4	2.7			DLHM <0.075	DLHM <0.075				<0.050	
	Dibromochloromethane	ug/g	2.3	2.9			DLHM <0.075	DLHM <0.075				<0.050	
	Chloroform	ug/g	0.47	0.18			DLHM <0.075	DLHM <0.075				<0.050	
	1,2-Dibromoethane	ug/g	0.05	0.05			DLHM <0.075	DLHM <0.075				<0.050	
	1,2-Dichlorobenzene	ug/g	1.2	1.7			DLHM <0.075	DLHM <0.075				<0.050	
	1,3-Dichlorobenzene	ug/g	9.6	12			DLHM <0.075	DLHM <0.075				<0.050	
	1,4-Dichlorobenzene	ug/g	0.2	0.57			DLHM <0.075	DLHM <0.075				<0.050	
	Dichlorodifluoromethane	ug/g	16	25			DLHM <0.075	DLHM <0.075				<0.050	
	1,1-Dichloroethane	ug/g	0.47	0.6			DLHM <0.075	DLHM <0.075				<0.050	
	1,2-Dichloroethane	ug/g	0.05	0.05			DLHM <0.075	DLHM <0.075				<0.050	
	1,1-Dichloroethylene	ug/g	0.064	0.48			DLHM <0.075	DLHM <0.075				<0.050	
	cis-1,2-Dichloroethylene	ug/g	1.9	2.5			DLHM <0.075	DLHM <0.075				<0.050	

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/8	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	Guide Limits #1	#2									
Volatile Organic Compounds	trans-1,2-Dichloroethylene	ug/g	1.3	2.5			DLHM <0.075	DLHM <0.075	[redacted]			<0.050	[redacted]
	1,3-Dichloropropene (cis & trans)	ug/g	0.059	0.081			<0.064	<0.064				<0.042	
	Methylene Chloride	ug/g	1.6	2			DLHM <0.075	DLHM <0.075				<0.050	
	1,2-Dichloropropane	ug/g	0.16	0.68			DLHM <0.075	DLHM <0.075				<0.050	
	cis-1,3-Dichloropropene	ug/g	-	-			DLHM <0.045	DLHM <0.045				<0.030	
	trans-1,3-Dichloropropene	ug/g	-	-			DLHM <0.045	DLHM <0.045				<0.030	
	Ethyl Benzene	ug/g	1.1	1.6			DLHM <0.075	DLHM <0.075				<0.050	
	n-Hexane	ug/g	46	88			DLHM <0.075	DLHM <0.075				<0.050	
	Methyl Ethyl Ketone	ug/g	70	88			DLHM <0.75	DLHM <0.75				<0.50	
	Methyl Isobutyl Ketone	ug/g	31	210			DLHM <0.75	DLHM <0.75				<0.50	
	MTBE	ug/g	1.6	2.3			DLHM <0.075	DLHM <0.075				<0.050	
	Styrene	ug/g	34	43			DLHM <0.075	DLHM <0.075				<0.050	
	1,1,1,2-Tetrachloroethane	ug/g	0.087	0.11			DLHM <0.075	DLHM <0.075				<0.050	
	1,1,2,2-Tetrachloroethane	ug/g	0.05	0.094			DLHM <0.075	DLHM <0.075				<0.050	
	Tetrachloroethylene	ug/g	1.9	2.5			DLHM <0.075	DLHM <0.075				<0.050	
	Toluene	ug/g	6.4	9			DLHM <0.30	DLHM <0.30				<0.20	
	1,1,1-Trichloroethane	ug/g	6.1	12			DLHM <0.075	DLHM <0.075				<0.050	
	1,1,2-Trichloroethane	ug/g	0.05	0.11			DLHM <0.075	DLHM <0.075				<0.050	
	Trichloroethylene	ug/g	0.55	0.61			DLHM <0.075	DLHM <0.075				<0.050	
	Trichlorofluoromethane	ug/g	4	5.8			DLHM <0.075	DLHM <0.075				<0.050	
	Vinyl chloride	ug/g	0.032	0.25			DLHM <0.030	DLHM <0.030				<0.020	
	o-Xylene	ug/g	-	-			DLHM <0.030	DLHM <0.030				<0.020	

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

			Guide Limits		ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/8	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	#1	#2									
Volatile Organic Compounds	m+p-Xylenes	ug/g	-	-			DLHM <0.045	DLHM <0.045				<0.030	
	Xylenes (Total)	ug/g	26	30			<0.054	<0.054				<0.050	
	Surrogate: 4-Bromofluorobenzene	%	-	-			88.1	89.4				87.7	
	Surrogate: 3,4-Dichlorotoluene	%	-	-			127.0	137.1				128.9	
	Surrogate: 1,4-Difluorobenzene	%	-	-			103.0	101.3				106.7	
Hydrocarbons	F1 (C6-C10)	ug/g	55	65								<5.0	
	F1-BTEX	ug/g	55	65								<5.0	
	F2 (C10-C16)	ug/g	230	250								14	
	F3 (C16-C34)	ug/g	1700	2500								156	
	F4 (C34-C50)	ug/g	3300	6600								167	
	F4G-SG (GHH-Silica)	mg/kg	3300	6600								540	
	Total Hydrocarbons (C6-C50)	ug/g	-	-								337	
	Chrom. to baseline at nC50		-	-								NO	
	Surrogate: 2-Bromobenzotrifluoride	%	-	-								83.8	
	Surrogate: Octacosane	%	-	-								106.5	
Polycyclic Aromatic Hydrocarbons	Acenaphthene	ug/g	21	29	<0.050								
	Acenaphthylene	ug/g	0.15	0.17	<0.050								
	Anthracene	ug/g	0.67	0.74	<0.050								
	Benzo[a]anthracene	ug/g	0.96	0.96	0.098								
	Benzo(a)pyrene	ug/g	0.3	0.3	0.098								
	Benzo(b)fluoranthene	ug/g	0.96	0.96	0.081								
	Benzo(g,h,i)perylene	ug/g	9.6	9.6	0.060								

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/6	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	Guide Limits #1	Guide Limits #2									
Polycyclic Aromatic Hydrocarbons	Benzo(k)fluoranthene	ug/g	0.96	0.96		0.065							
	Chrysene	ug/g	9.6	9.6		0.097							
	Dibenzo(ah)anthracene	ug/g	0.1	0.1		<0.050							
	Fluoranthene	ug/g	9.6	9.6		0.181							
	Fluorene	ug/g	62	69		<0.050							
	Indeno(1,2,3-cd)pyrene	ug/g	0.76	0.95		0.065							
	1+2-Methylnaphthalenes	ug/g	30	42		<0.042							
	1-Methylnaphthalene	ug/g	30	42		<0.030							
	2-Methylnaphthalene	ug/g	30	42		<0.030							
	Naphthalene	ug/g	9.6	28		<0.050							
	Phenanthrene	ug/g	12	16		0.095							
	Pyrene	ug/g	96	96		0.174							
	Surrogate: 2-Fluorobiphenyl	%	-	-		97.2							
	Surrogate: p-Terphenyl d14	%	-	-		95.8							
Semi-Volatile Organics	Biphenyl	mg/kg	52	210		<0.10							
	4-Bromophenylphenyl ether	mg/kg	-	-		<0.10							
	Butylbenzyl phthalate	mg/kg	-	-		<0.10							
	Camphene	mg/kg	-	-		<0.10							
	4-Chloro-3-methylphenol	mg/kg	-	-		<0.10							
	4-Chloroaniline	mg/kg	0.5	0.53		<0.10							
	Bis(2-chloroethoxy)methane	mg/kg	-	-		<0.10							
	Bis(2-Chloroethyl)_ether	mg/kg	0.5	0.5		<0.10							

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/8	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	Guide Limits #1	#2									
Semi-Volatile Organics	Bis(2-chloroisopropyl)ether	mg/kg	11	13		<0.10							
	1-Chloronaphthalene	mg/kg	-	-		<0.10							
	2-Chloronaphthalene	mg/kg	-	-		<0.10							
	2-Chlorophenol	mg/kg	3.1	3.9		<0.10							
	4-Chlorophenyl phenyl ether	mg/kg	-	-		<0.10							
	3&4-Methylphenol	mg/kg	-	-		<0.10							
	Cresols (total)	mg/kg	-	-		<0.20							
	Dibenzofuran	mg/kg	-	-		<0.10							
	3,3'-Dichlorobenzidine	mg/kg	1	1		<0.10							
	2,4-Dichlorophenol	mg/kg	0.19	0.27		<0.10							
	2,6-Dichlorophenol	mg/kg	-	-		<0.10							
	Diethylphthalate	mg/kg	0.5	0.5		<0.10							
	Dimethylphthalate	mg/kg	0.5	0.5		<0.10							
	2,4-Dimethylphenol	mg/kg	38	53		<0.10							
	Di-n-butylphthalate	mg/kg	-	-		<0.10							
	2,4-Dinitrophenol	mg/kg	2	2.9		<0.20							
	2,4-Dinitrotoluene	mg/kg	0.5	0.5		<0.10							
	2,6-Dinitrotoluene	mg/kg	0.5	0.5		<0.10							
	Di-n-octylphthalate	mg/kg	-	-		<0.10							
	Diphenyl ether	mg/kg	-	-		<0.10							
	Diphenylamine	mg/kg	-	-		<0.10							
	Bis(2-ethylhexyl)phthalate	mg/kg	28	35		0.69							

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/8	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	Guide Limits #1	#2									
Semi-Volatile Organics	Hexachlorobenzene	mg/kg	0.66	0.66		<0.10							
	Hexachlorobutadiene	mg/kg	0.031	0.095		<0.10							
	Hexachlorocyclopentadiene	mg/kg	-	-		<0.10							
	Hexachloroethane	mg/kg	0.21	0.43		<0.10							
	Indole	mg/kg	-	-		<0.10							
	Isophorone	mg/kg	-	-		<0.10							
	4,6-Dinitro-2-methylphenol	mg/kg	-	-		<1.0							
	2-Methylphenol	mg/kg	-	-		<0.10							
	5-Nitroacenaphthene	mg/kg	-	-		<0.10							
	Nitrobenzene	mg/kg	-	-		<0.10							
	2-Nitrophenol	mg/kg	-	-		<0.20							
	4-Nitrophenol	mg/kg	-	-		<0.20							
	N-Nitroso-di-n-propylamine	mg/kg	-	-		<0.10							
	Pentachlorophenol	mg/kg	2.9	3.3		<0.10							
	Perylene	mg/kg	-	-		<0.10							
	Phenol	mg/kg	9.4	9.4		<0.10							
	2,3,4,5-Tetrachlorophenol	mg/kg	-	-		<0.10							
	2,3,4,6-Tetrachlorophenol	mg/kg	-	-		<0.10							
	2,3,5,6-Tetrachlorophenol	mg/kg	-	-		<0.10							
	1,2,3-Trichlorobenzene	mg/kg	-	-		<0.10							
	1,2,4-Trichlorobenzene	mg/kg	3.2	16		<0.10							
	2,3,4-Trichlorophenol	mg/kg	-	-		<0.10							

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

			Guide Limits		ALS ID	L1146861-1	L1146861-2	L1146861-3	L1146861-4	L1146861-5	L1146861-6	L1146861-7	L1146861-8
					Sampled Date	14-MAY-12	14-MAY-12	14-MAY-12	07-MAY-12	07-MAY-12	08-MAY-12	08-MAY-12	14-MAY-12
					Sampled Time	12:00	12:00	12:00	12:00	12:00	12:00	12:00	-
					Sample ID	BH 1/3	BH 1/5	DUP	BH 3/2	BH 3/8	BH 4/2	BH 4/5	BH 2/6
Grouping	Analyte	Unit	#1	#2									
Semi-Volatile Organics	2,3,5-Trichlorophenol	mg/kg	-	-		<0.10							
	2,4,5-Trichlorophenol	mg/kg	9.1	10		<0.10							
	2,4,6-Trichlorophenol	mg/kg	2.1	2.9		<0.10							
	Surrogate: 2-Fluorobiphenyl	%	-	-		95.0							
	Surrogate: Nitrobenzene d5	%	-	-		87.6							
	Surrogate: Phenol d5	%	-	-		91.3							
	Surrogate: p-Terphenyl d14	%	-	-		96.7							
	Surrogate: 2,4,6-Tribromophenol	%	-	-		92.8							
Polychlorinated Biphenyls	Aroclor 1242	ug/g	-	-	DLM	<0.025							
	Aroclor 1248	ug/g	-	-		<0.010							
	Aroclor 1254	ug/g	-	-		<0.010							
	Aroclor 1260	ug/g	-	-		<0.010							
	Total PCBs	ug/g	1.1	1.1	DLM	<0.025							
	Surrogate: d14-Terphenyl	%	-	-		121.4							

Guide Limit #1: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)
Guide Limit #2: ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T2-Soil-Ind/Com/Commu Property Use (Coarse)						
L1146861-1	BH 1/3	Physical Tests	Conductivity	2.32	1.4	mS/cm
		Semi-Volatile Organics	Hexachlorobutadiene	<0.10	0.031	mg/kg
L1146861-2	BH 1/5	Volatile Organic Compounds	Bromomethane	<0.075	0.05	ug/g
			1,2-Dibromoethane	<0.075	0.05	ug/g
			1,2-Dichloroethane	<0.075	0.05	ug/g
			1,1-Dichloroethylene	<0.075	0.064	ug/g
			1,3-Dichloropropene (cis & trans)	<0.064	0.059	ug/g
			1,1,2,2-Tetrachloroethane	<0.075	0.05	ug/g
			1,1,2-Trichloroethane	<0.075	0.05	ug/g
L1146861-3	DUP	Volatile Organic Compounds	Bromomethane	<0.075	0.05	ug/g
			1,2-Dibromoethane	<0.075	0.05	ug/g
			1,2-Dichloroethane	<0.075	0.05	ug/g
			1,1-Dichloroethylene	<0.075	0.064	ug/g
			1,3-Dichloropropene (cis & trans)	<0.064	0.059	ug/g
			1,1,2,2-Tetrachloroethane	<0.075	0.05	ug/g
			1,1,2-Trichloroethane	<0.075	0.05	ug/g
L1146861-4	[redacted]					
L1146861-10						
Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T2-Soil-Ind/Com/Commu Property Use (Fine)						
L1146861-1	BH 1/3	Physical Tests	Conductivity	2.32	1.4	mS/cm
		Semi-Volatile Organics	Hexachlorobutadiene	<0.10	0.095	mg/kg
L1146861-2	BH 1/5	Volatile Organic Compounds	Bromomethane	<0.075	0.05	ug/g
			1,2-Dibromoethane	<0.075	0.05	ug/g
			1,2-Dichloroethane	<0.075	0.05	ug/g
L1146861-3	DUP	Volatile Organic Compounds	Bromomethane	<0.075	0.05	ug/g
			1,2-Dibromoethane	<0.075	0.05	ug/g
			1,2-Dichloroethane	<0.075	0.05	ug/g
L1146861-4	[redacted]					
L1146861-10						

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
DLHM	Detection Limit Adjusted: Sample has High Moisture Content

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
625-NO-PAH-WT	Soil	EPA 8270 Extractables	SW846 8270

Soil samples are extracted and the extracts are analyzed by GC/MSD.

B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CL-R511-WT	Water	Chloride-O.Reg 153/04 (July 2011)	EPA 300.0 (IC)

Aqueous samples are analyzed directly or may be filtered in the laboratory prior to analysis using ion chromatography.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04 (July 2011)	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Soil	Hex Chrom-O.Reg 153/04 (July 2011)	SW846 3060A/7199

Soil sample undergoes a alkaline digestion process where the sample is acidified and derivatized with 1,5-diphenylcarbazide (DPC) using ion chromatography.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Soil	Conductivity-O.Reg 153/04 (July 2011)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Reference Information

Methods Listed (If applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-511-WT	Water	F1-O.Reg 153/04 (July 2011)	MOE DECPH-E3421/CCME TIER 1

Fraction F1 is determined by purging a volume of a ground water sample followed by GC/FID analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC DEC-2000 - PUB# 1310-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC DEC-2000 - PUB# 1310-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1

Fractions F2, F3 and F4 are determined by extracting a soil sample with a solvent mix. The solvent recovered from the extracted soil sample is dried and treated to remove polar material. The extract is analyzed by GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F2-F4-511-WT Water F2-F4-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1

Fractions F2, F3 and F4 are determined by liquid/liquid extraction with a solvent. The solvent recovered from the extracted sample is dried and treated to remove polar material. The extract is then analyzed by GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F4G-ADD-511-WT Soil F4G SG-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-DIS-R511-WT Water Hg-Dissolved-O.Reg 153/04 (July 2011) SW846 7470A

Liquid sample is digested with a heated, strong, mixed acid solution to convert all forms of mercury to divalent mercury. The divalent mercury is then reduced to elemental mercury, sparged from solution and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-R511-WT Soil Mercury-O.Reg 153/04 (July 2011) SW846 3050B/7471

Solid sample is digested with a heated, strong, mixed acid solution to convert all forms of mercury to divalent mercury. The divalent mercury is then reduced to elemental mercury, sparged from solution and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-R511-WT Water Metals-Dissolved-153/04 (July 2011) EPA 200.8

Ground water samples are filtered and preserved and analyzed by ICP/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-UG/G-CCMS-WT Soil Metal Scan Collision Cell ICPMS EPA 200.2/6020A

Sample is vigorously digested with nitric acid and hydrogen peroxide. Analysis is conducted by ICP/MS.

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture Gravimetric: Oven Dried

PAH-511-WT Soil PAH-O.Reg 153/04 (July 2011) SW846 3510/8270

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
		A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.	
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).	
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082
		An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.	
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).	
PH-R511-WT	Soil	pH-O.Reg 153/04 (July 2011)	MOEE E3137A
		A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.	
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).	
PH-R511-WT	Water	pH-O. Reg 153/04 (July 2011)	MOEE E3137A-R511
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).	
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
		A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES.	
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).	
VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)
		Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.	
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).	
VOC-511-PTMS-WT	Water	VOC-O. Reg 153/04 (July 2011)	SW846 8260
		The purge and trap method purges Volatile Organic Compounds (VOC) from aqueous samples by bubbling an inert gas through the sample. Once in the gaseous phase, the analytes are swept from the purging device and trapped in a short column. The compounds are that are trapped on the column are thermally desorbed and transferred to the analytical column of the GC/MS.	
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).	

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

124529

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

124529

C of C # 00000

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8
Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

Page 1 of 1

Note: all TAT Quoted material is in business days which excludes statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date required

Service requested: 5 day (regular) ✓ | 3-4 day (25%) | 2 day TAT (50%) | Next day TAT (100%) | Same day TAT (200%)

COMPANY NAME: Sol Engineers Ltd
OFFICE: Toronto
PROJECT MANAGER: Thurston
PROJECT #: 1104-504 8E
PHONE: | FAX:
ACCOUNT #:
QUOTATION #: | PO #:

CRITERIA — Criteria on report YES ___ NO ___
Reg 153/04 ☐ Reg 511/09 ☑
Table (1) 2 3 4 5 6 7 8 9
TCLP ___ MISA ___ PWQO ___
ODWS ___ OTHER ___

REPORT FORMAT/DISTRIBUTION
EMAIL ✓ FAX ___ BOTH ___
SELECT: PDF ✓ DIGITAL ___ BOTH ___
EMAIL 1 Thurston
EMAIL 2 ___

SAMPLING INFORMATION

Sample Date (dd/mm/yy)	Time (24hr) (hh:mm)	TYPE: COMP	TYPE: GRAB	MATRIX: WATER	MATRIX: SOIL	MATRIX: OTHER	SAMPLE DESCRIPTION TO APPEAR ON REPORT	NUMBER OF CONTAINERS	ANALYSIS REQUEST: Metals + Inorganics	PAHs	VOC	F1-F4 BTEX	VOC F1 to F4 w/ BTEX	VOC's English	COMMENTS	LAB ID
Sample							DATE									
BH1/3	12:00				✓		May 14 2012	2	✓	✓						-1
BH1/5					✓		May 14 2012	3			✓					-2
DUP					✓		May 14 2012									-3
BH3/2					✓		May 8 2012		✓		✓					-4
BH3/8					✓		May 8 2012				✓	✓				-5
BH4/2					✓		May 8 2012		✓							-6
RW4/5					✓		May 8 2012				✓	✓				-7
BH2/6					✓		May 14, 12				✓	✓			extra samples received 15-MAY-12	-8
RW4				✓			May 14, 12		✓				✓			-9
MW3				✓			May 14, 12		✓				✓			-10
MW2				✓			May 14, 12		✓					X		-11
DUP2				✓			May 15, 12							X		-12

SUBMISSION #: L1146861
ENTERED BY: MG1
DATE/TIME ENTERED: 14-MAY-12
BIN #: —

SPECIAL INSTRUCTIONS/COMMENTS
*changed Fr. 5 sample ID to BH 3/8 as per Thurston

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK Yes OR No)
Are any samples taken from a regulated DW System? Yes ☐ No ☑
If yes, an authorized drinking water COC MUST be used for this submission.
Is the water sampled intended to be potable for human consumption? Yes ☐ No ☑

SAMPLE CONDITION
FROZEN ☐ COLD ☑ COOLING INITIATED ☐ AMBIENT ☐ OBSERVATIONS Yes ☐ No ☑ If yes, add SIF
MEAN TEMP 12°C
INIT MG

SAMPLED BY: Thurston
RELINQUISHED BY:
DATE & TIME May 14 2012
RECEIVED BY:
DATE & TIME
RECEIVED AT LAB
DATE & TIME 5/15/12
DATE & TIME 14-MAY-12 18:00

Notes:
1. Quote number must be provided to ensure proper pricing
2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

*removed VOC, F1 to F4 for MW2 added VOC's
*added Dup2 sample for VOC's MG/RH/16-MAY-12

124651

C of C # 00000

60 NORTHLAND ROAD, UNIT 1
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ALS Environmental

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

Page 1 of 1

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date required	Service requested		# day TAT (50%)	
	5 day (regular)	✓	Next day TAT (100%)	
	3-4 day (25%)		Same day TAT (200%)	

COMPANY NAME: Sol Engineering Ltd.
OFFICE: Toronto
PROJECT MANAGER: Theresa Kennedy
PROJECT #: 1204-3045E
PHONE: FAX:
ACCOUNT #:
QUOTATION #: PO #:

CRITERIA — Criteria on report YES ✓ NO
Reg 153/04 ☐ Reg 511/09 ☑
Table 1 (2) 3 4 5 6 7 8 9
TCLP ____ MISA ____ PWQO ____
ODWS ____ OTHER ____

REPORT FORMAT/DISTRIBUTION
EMAIL ✓ FAX ____ BOTH ____
SELECT: PDF ✓ DIGITAL ____ BOTH ____
EMAIL 1 Theresa
EMAIL 2

ANALYSIS REQUEST

PLEASE INDICATE FILTERED, PRESERVED OR BOTH <--- (F, P, F/P)

SUBMISSION # LI146561-1
ENTERED BY: MG1
DATE/TIME ENTERED: 14-MAY-12
BIN # B749

SAMPLING INFORMATION

Sample Date/Time		TYPE		MATRIX			SAMPLE DESCRIPTION TO APPEAR ON REPORT	NUMBER OF CONTAINERS			COMMENTS	LAB ID
Date (dd-mm-yy)	Time (24hr) (hh:mm)	COMP	GRAB	WATER	SOIL	OTHER		BTEX	PCB			
May 14 2012	12:00	✓			✓		BH1/3	✓	✓			-1

SPECIAL INSTRUCTIONS/COMMENTS

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK Yes OR No)
Are any samples taken from a regulated DW System? Yes ☐ No ☑
If yes, an authorized drinking water COC MUST be used for this submission.
Is the water sampled intended to be potable for human consumption? Yes ☐ No ☑

SAMPLE CONDITION
FROZEN ☐ COLD ☑ COOLING INITIATED ☐ AMBIENT ☐
MEAN TEMP 10° C
OBSERVATIONS Yes ☐ No ☑ If yes add SIF
INT. 14.6

SAMPLED BY:
RELINQUISHED BY:
DATE & TIME: May 8 12
RECEIVED BY:
DATE & TIME
DATE & TIME:
RECEIVED AT LAB BY: RJG
DATE & TIME: 08-JUN-12 13:55

Notes
1. Quote number must be provided to ensure proper pricing
2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TAT's.
3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.

Soil Engineers Ltd.
ATTN: THARSHAN KAMALESWARAN
100 NUGGET AVENUE
TORONTO ON M1S 3A7

Date Received: 25-MAY-12
Report Date: 28-MAY-12 14:44 (MT)
Version: FINAL

Client Phone: 416-754-8515

Certificate of Analysis

Lab Work Order #: L1152388
Project P.O. #: NOT SUBMITTED
Job Reference: 1204-S048E
C of C Numbers: 114466
Legal Site Desc:

MATHUMAI GANESHKUMAR
Account Manager

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1152388-1
					Sampled Date	07-MAY-12
					Sampled Time	12:00
					Sample ID	BH 3/3
Grouping	Analyte	Unit	Guide Limits #1	#2		
Physical Tests	Conductivity	mS/cm	1.4	1.4		
	% Moisture	%	-	-		
	pH	pH units	-	-		
Cyanides	Cyanide, Weak Acid Diss	ug/g	0.051	0.051		
Saturated Paste Extractables	SAR	SAR	12	12		
Metals	Antimony (Sb)	ug/g	40	50		
	Arsenic (As)	ug/g	18	18		
	Barium (Ba)	ug/g	670	670		
	Beryllium (Be)	ug/g	8	10		
	Boron (B)	ug/g	120	120		
	Boron (B), Hot Water Ext.	ug/g	2	2		
	Cadmium (Cd)	ug/g	1.9	1.9		
	Chromium (Cr)	ug/g	160	160		
	Cobalt (Co)	ug/g	80	100		
	Copper (Cu)	ug/g	230	300		
	Lead (Pb)	ug/g	120	120		
	Mercury (Hg)	ug/g	3.9	20		
	Molybdenum (Mo)	ug/g	40	40		
	Nickel (Ni)	ug/g	270	340		
	Selenium (Se)	ug/g	5.5	5.5		
	Silver (Ag)	ug/g	40	50		
	Thallium (Tl)	ug/g	3.3	3.3		

Guide Limit #1: ON511/11-T3-Soil-Ind/Com/Commu. Property Use (Coarse)
Guide Limit #2: ON511/11-T3-Soil-Ind/Com/Commu. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

					ALS ID	L1152388-1
					Sampled Date	07-MAY-12
					Sampled Time	12:00
					Sample ID	BH 3/3
Grouping	Analyte	Unit	Guide Limits #1	#2		
Metals	Uranium (U)	ug/g	33	33		
	Vanadium (V)	ug/g	86	86		
	Zinc (Zn)	ug/g	340	340		
Speciated Metals	Chromium, Hexavalent	ug/g	8	10		

Guide Limit #1: ON511/11-T3-Soil-Ind/Com/Commu. Property Use (Coarse)
Guide Limit #2: ON511/11-T3-Soil-Ind/Com/Commu. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T3-Soil-Ind/Com/Commu. Property Use (Coarse)

(No parameter exceedances)

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T3-Soil-Ind/Com/Commu. Property Use (Fine)

(No parameter exceedances)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Soil	Hex Chrom-O.Reg 153/04 (July 2011)	SW846 3060A/7199

Soil sample undergoes a alkaline digestion process where the sample is acidified and derivatized with 1,5-diphenylcarbazide (DPC) using ion chromatography.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Soil	Conductivity-O.Reg 153/04 (July 2011)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-R511-WT	Soil	Mercury-O.Reg 153/04 (July 2011)	SW846 3050B/7471

Solid sample is digested with a heated, strong, mixed acid solution to convert all forms of mercury to divalent mercury. The divalent mercury is then reduced to elemental mercury, sparged from solution and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-UG/G-CCMS-WT	Soil	Metal Scan Collision Cell ICPMS	EPA 200.2/6020A

Sample is vigorously digested with nitric acid and hydrogen peroxide. Analysis is conducted by ICP/MS.

MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PH-R511-WT	Soil	pH-O.Reg 153/04 (July 2011)	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

114466

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

ALS Environmental

Quality Control Report

Workorder: L1152388 Report Date: 28-MAY-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R2371870								
WG1478661-4 DUP		**WG1478661-3**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	40	28-MAY-12
WG1478661-2 LCS								
Boron (B), Hot Water Ext.			78.7		%		70-130	28-MAY-12
WG1478661-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	28-MAY-12
WG1478661-5 MS		**WG1478661-3**						
Boron (B), Hot Water Ext.			98.1		%		60-140	28-MAY-12
CN-WAD-R511-WT	**Soil**							
Batch R2372140								
WG1478943-3 CVS								
Cyanide, Weak Acid Diss			106.0		%		80-120	28-MAY-12
WG1478266-3 DUP		**L1152388-1**						
Cyanide, Weak Acid Diss		N/A	0		mg/L	N/A	35	28-MAY-12
Cyanide, Weak Acid Diss		<0.050	0		ug/g	N/A	35	28-MAY-12
WG1478266-2 LCS								
Cyanide, Weak Acid Diss			103.5		%		80-120	28-MAY-12
WG1478266-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	28-MAY-12
WG1478266-4 MS		**L1152388-1**						
Cyanide, Weak Acid Diss			107		%		70-130	28-MAY-12
Cyanide, Weak Acid Diss			0.0213		mg/L		70-130	28-MAY-12
Cyanide, Weak Acid Diss			0.213		ug/g		70-130	28-MAY-12
CR-CR6-IC-R511-WT	**Soil**							
Batch R2372108								
WG1478278-3 DUP		**L1152388-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	28-MAY-12
WG1478278-2 LCS								
Chromium, Hexavalent			102.6		%		80-120	28-MAY-12
WG1478278-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	28-MAY-12
WG1478278-4 MS		**L1152388-1**						
Chromium, Hexavalent			107.2		%		70-130	28-MAY-12
EC-R511-WT	**Soil**							

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-R511-WT	**Soil**							
Batch R2372092								
WG1478664-2 DUP		**L1152312-3**						
Conductivity		1.08	1.08		mS/cm	0.2	20	28-MAY-12
WG1478945-1 LCS								
Conductivity			97.4		%		90-110	28-MAY-12
WG1478664-1 MB								
Conductivity			<0.0040		mS/cm		0.004	28-MAY-12
HG-R511-WT	**Soil**							
Batch R2371828								
WG1478659-2 CRM		**WT-SS-1**						
Mercury (Hg)			94.1		%		70-130	28-MAY-12
WG1478659-4 DUP		**WG1478659-3**						
Mercury (Hg)		0.012	0.014		ug/g	8.4	30	28-MAY-12
WG1478659-7 LCS								
Mercury (Hg)			100.5		%		80-120	28-MAY-12
WG1478659-1 MB								
Mercury (Hg)			<0.010		ug/g		0.01	28-MAY-12
WG1478659-5 MS		**WG1478659-3**						
Mercury (Hg)			101.4		%		70-130	28-MAY-12
MET-UG/G-CCMS-WT	**Soil**							
Batch R2372021								
WG1478720-2 CVS								
Antimony (Sb)			96.1		%		70-130	28-MAY-12
Arsenic (As)			97.6		%		70-130	28-MAY-12
Barium (Ba)			100.2		%		70-130	28-MAY-12
Beryllium (Be)			95.1		%		70-130	28-MAY-12
Boron (B)			93.0		%		70-130	28-MAY-12
Cadmium (Cd)			104.3		%		70-130	28-MAY-12
Chromium (Cr)			98.1		%		70-130	28-MAY-12
Cobalt (Co)			97.9		%		70-130	28-MAY-12
Copper (Cu)			97.5		%		70-130	28-MAY-12
Lead (Pb)			94.9		%		70-130	28-MAY-12
Molybdenum (Mo)			98.3		%		70-130	28-MAY-12
Nickel (Ni)			98.9		%		70-130	28-MAY-12
Selenium (Se)			99.4		%		70-130	28-MAY-12
Silver (Ag)			98.8		%		70-130	28-MAY-12
Thallium (Tl)			96.0		%		70-130	28-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7

Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	**Soil**							
Batch R2372021								
WG1478720-2 CVS								
Uranium (U)			90.9		%		70-130	28-MAY-12
Vanadium (V)			97.1		%		70-130	28-MAY-12
Zinc (Zn)			91.7		%		70-130	28-MAY-12
WG1478659-4 DUP		**WG1478659-3**						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	28-MAY-12
Arsenic (As)		4.24	4.23		ug/g	0.3	30	28-MAY-12
Barium (Ba)		112	112		ug/g	0.5	40	28-MAY-12
Beryllium (Be)		0.79	0.77		ug/g	1.7	30	28-MAY-12
Boron (B)		20.3	19.4		ug/g	4.6	30	28-MAY-12
Cadmium (Cd)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	28-MAY-12
Chromium (Cr)		26.5	26.4		ug/g	0.4	30	28-MAY-12
Cobalt (Co)		10.2	10.4		ug/g	1.2	30	28-MAY-12
Copper (Cu)		19.8	20.2		ug/g	2.2	30	28-MAY-12
Lead (Pb)		12.9	12.8		ug/g	0.3	40	28-MAY-12
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	28-MAY-12
Nickel (Ni)		21.6	21.8		ug/g	0.9	30	28-MAY-12
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	28-MAY-12
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	28-MAY-12
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	28-MAY-12
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	28-MAY-12
Vanadium (V)		39.9	39.5		ug/g	1.2	30	28-MAY-12
Zinc (Zn)		65.9	66.5		ug/g	0.8	30	28-MAY-12
WG1478659-6 LCS								
Antimony (Sb)			92.2		%		80-120	28-MAY-12
Arsenic (As)			99.5		%		80-120	28-MAY-12
Barium (Ba)			99.6		%		80-120	28-MAY-12
Beryllium (Be)			97.0		%		80-120	28-MAY-12
Boron (B)			95.3		%		80-120	28-MAY-12
Cadmium (Cd)			98.3		%		80-120	28-MAY-12
Chromium (Cr)			98.9		%		80-120	28-MAY-12
Cobalt (Co)			96.7		%		80-120	28-MAY-12
Copper (Cu)			95.8		%		80-120	28-MAY-12
Lead (Pb)			95.9		%		80-120	28-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	**Soil**							
Batch R2372021								
WG1478659-6 LCS								
Molybdenum (Mo)			100.1		%		80-120	28-MAY-12
Nickel (Ni)			97.4		%		80-120	28-MAY-12
Selenium (Se)			100.3		%		80-120	28-MAY-12
Silver (Ag)			99.9		%		80-120	28-MAY-12
Thallium (Tl)			97.1		%		80-120	28-MAY-12
Uranium (U)			92.4		%		80-120	28-MAY-12
Vanadium (V)			99.3		%		80-120	28-MAY-12
Zinc (Zn)			98.4		%		80-120	28-MAY-12
WG1478659-1 MB								
Antimony (Sb)			<1.0		ug/g		1	28-MAY-12
Arsenic (As)			<0.20		ug/g		0.2	28-MAY-12
Barium (Ba)			<1.0		ug/g		1	28-MAY-12
Beryllium (Be)			<0.50		ug/g		0.5	28-MAY-12
Boron (B)			<5.0		ug/g		5	28-MAY-12
Cadmium (Cd)			<0.50		ug/g		0.5	28-MAY-12
Chromium (Cr)			<1.0		ug/g		1	28-MAY-12
Cobalt (Co)			<1.0		ug/g		1	28-MAY-12
Copper (Cu)			<1.0		ug/g		1	28-MAY-12
Lead (Pb)			<1.0		ug/g		1	28-MAY-12
Molybdenum (Mo)			<1.0		ug/g		1	28-MAY-12
Nickel (Ni)			<1.0		ug/g		1	28-MAY-12
Selenium (Se)			<1.0		ug/g		1	28-MAY-12
Silver (Ag)			<0.20		ug/g		0.2	28-MAY-12
Thallium (Tl)			<0.50		ug/g		0.5	28-MAY-12
Uranium (U)			<1.0		ug/g		1	28-MAY-12
Vanadium (V)			<1.0		ug/g		1	28-MAY-12
Zinc (Zn)			<5.0		ug/g		5	28-MAY-12
WG1478659-5 MS		**WG1478659-3**						
Antimony (Sb)			89.6		%		70-130	28-MAY-12
Arsenic (As)			N/A	MS-B	%		-	28-MAY-12
Barium (Ba)			N/A	MS-B	%		-	28-MAY-12
Beryllium (Be)			90.7		%		70-130	28-MAY-12
Boron (B)			N/A	MS-B	%		-	28-MAY-12
Cadmium (Cd)			96.3		%		70-130	28-MAY-12

ALS Environmental

Quality Control Report

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	**Soil**							
Batch R2372021								
WG1478659-5 MS		**WG1478659-3**						
Chromium (Cr)			N/A	MS-B	%		-	28-MAY-12
Cobalt (Co)			N/A	MS-B	%		-	28-MAY-12
Copper (Cu)			N/A	MS-B	%		-	28-MAY-12
Lead (Pb)			N/A	MS-B	%		-	28-MAY-12
Molybdenum (Mo)			108.4		%		70-130	28-MAY-12
Nickel (Ni)			N/A	MS-B	%		-	28-MAY-12
Selenium (Se)			94.2		%		70-130	28-MAY-12
Silver (Ag)			87.5		%		70-130	28-MAY-12
Thallium (Tl)			90.0		%		70-130	28-MAY-12
Uranium (U)			100.1		%		70-130	28-MAY-12
Vanadium (V)			N/A	MS-B	%		-	28-MAY-12
Zinc (Zn)			N/A	MS-B	%		-	28-MAY-12
MOISTURE-WT	**Soil**							
Batch R2371541								
WG1478284-3 DUP		**L1152581-3**						
% Moisture		16.2	15.8		%	2.3	30	25-MAY-12
WG1478284-2 LCS								
% Moisture			96.2		%		70-130	25-MAY-12
WG1478284-1 MB								
% Moisture			<0.10		%		0.1	25-MAY-12
PH-R511-WT	**Soil**							
Batch R2371479								
WG1478276-2 DUP		**L1152388-1**						
pH		8.43	8.13		pH units	3.6	20	25-MAY-12
WG1478276-3 DUP		**L1151982-2**						
pH		12.18	12.19		pH units	0.1	20	25-MAY-12
WG1478276-1 LCS								
pH			7.00		pH units		6.7-7.3	25-MAY-12

Quality Control Report

Workorder: L1152388 Report Date: 28-MAY-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L1152388 Report Date: 28-MAY-12

Client: Soil Engineers Ltd.
100 NUGGET AVENUE
TORONTO ON M1S 3A7
Contact: THARSHAN KAMALESWARAN

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
% Moisture							
	1	07-MAY-12 12:00	25-MAY-12 22:17	14	18	days	EHTR
Cyanides							
Cyanide (WAD)-O.Reg 153/04 (July 2011)							
	1	07-MAY-12 12:00	25-MAY-12 20:19	14	18	days	EHTR

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1152388 were received on 25-MAY-12 15:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

114466

C of C # 00000

60 NORTHLAND ROAD, UNIT 1
WATERLOO, ON N2V 2B8
Phone: (519) 886-6910
Fax: (519) 886-9047
Toll Free: 1-800-668-9878

ALS Environmental

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

Page 1 of 1

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Specify date required	Service requested		2 day TAT (50%)	
	5 day (regular)		Next day TAT (100%)	✓
	3-4 day (25%)		Same day TAT (200%)	

COMPANY NAME: Soil Engineers Ltd
OFFICE: Toronto
PROJECT MANAGER: Thershan
PROJECT #: 204-50486
PHONE:
FAX:
ACCOUNT #:
QUOTATION #:
PO #:

CRITERIA — Criteria on report YES ✓ NO ___
Reg 153/04 ✓ Reg 511/09 ☐ ICC
Table 1 2 (3) 4 5 6 7 8 9
TCLP ___ MISA ___ PWQO ___
ODWS ___ OTHER ___

REPORT FORMAT/DISTRIBUTION
EMAIL ✓ FAX ___ BOTH ___
SELECT: PDF ✓ DIGITAL ___ BOTH ___
EMAIL 1 Thershan
EMAIL 2

ANALYSIS REQUEST: Metals & Inorganics

PLEASE INDICATE FILTERED, PRESERVED OR BOTH ←— (F, P, F/P)

SUBMISSION #: L1152388
ENTERED BY: MG1
DATE/TIME ENTERED: 25-MAY-12
BIN #: —

SAMPLING INFORMATION

Date (dd-mm-yy)	Time (24hr) (hh:mm)	COMP	GRAB	WATER	SOIL	OTHER	SAMPLE DESCRIPTION TO APPEAR ON REPORT	NUMBER OF CONTAINERS	Metals & Inorganics	COMMENTS	LAB ID
07-05-12	12:30	✓			✓		BH3/3		✓		-1

SPECIAL INSTRUCTIONS/COMMENTS

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK Yes OR No)
Are any samples taken from a regulated DW System? Yes ☐ No ✓
If yes, an authorized drinking water COC MUST be used for this submission.
Is the water sampled intended to be potable for human consumption? Yes ☐ No ✓

SAMPLE CONDITION
FROZEN ☐
COLD ☐
COOLING INITIATED ☐
AMBIENT ✓
MEAN TEMP: 11°C
OBSERVATIONS: Yes ☐ No ✓ If yes add SIF
INIT: MG

SAMPLED BY: Thershan
DATE & TIME: May 7 2012
RECEIVED BY: [signature] May
DATE & TIME: 25/12 1415
RELINQUISHED BY:
DATE & TIME:
RECEIVED AT LAB BY: MG1
DATE & TIME: 25-MAY-12 15:00

Notes:
1. Quote number must be provided to ensure proper pricing
2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.