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A REPORT TO
BRONTE GREEN CORPORATION

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PROPOSED RESIDENTIAL DEVELOPMENT

1401 BRONTE ROAD

TOWN OF OAKVILLE

Reference No. 1211-E073

October 25, 2013

DISTRIBUTION

3 Copies - David Schaeffer Engineering Ltd.

LIMITATIONS OF LIABILITY

This report was prepared by Soil Engineers Ltd. for the account of Bronte Green Corporation and for review by its designated agents, financial institutions and government agencies. The material in it reflects the judgement of Andrejs Jansons, B.Eng., E.I.T., and Ian Chiu, P.Eng., in light of the information available at the time of preparation. Any use which a Third Party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. Soil Engineers Ltd. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

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 analyze representative soil samples for a Phase Two Environmental Assessment only. No other warranty or representation, expressed or implied, as to the accuracy of the information is 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. Please note that subsurface conditions may vary between sampling locations.

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

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TABLES

ENCLOSURES

1.0 EXECUTIVE SUMMARY

Soil Engineers Ltd. was retained by Bronte Green Corporation., to conduct a Phase Two Environmental Site Assessment at 1401 Bronte Road, in the Town of Oakville.

The purpose of the investigation is to establish a chemical profile of the current soil and groundwater conditions at the subject site further to the findings of our Phase One assessment.

The site is part of a golf course, and is irregularly shaped. Bronte Road extends along the west limit, and a hydro corridor separates the west and east parts of the site. Fourteen Mile Creek lies to the north/northeast. The surrounding areas consist of residential properties and wooded land to the west, the Halton Region office to the south, Deerfield Golf Course to the south/southeast, wooded land along Fourteen Mile Creek to the north/northeast, and residential development to the north. Soil and groundwater samples were retrieved at selected locations on the subject site and submitted for laboratory analyses. A review of the analytical results for the soil and groundwater indicates the concentrations of the tested parameters are below the reportable detection limits or within the Table 2 potable groundwater site condition standards for residential, parkland and institutional property usage. It is noted that the findings and assessment for the areas along the creek are not included in this report but will be presented under separate cover.

Based on the findings and results of our Phase One and Phase Two environmental site assessments, we consider the site to be suitable for the proposed residential development.

2.0 INTRODUCTION

Soil Engineers Ltd. has conducted a Phase Two Environmental Site Assessment (ESA) as defined by Ontario Regulation (O. Reg.) 153/04, as amended by O. Regs. 366/05, 66/08, 511/09, 245/10, 179/11 and 269/11, herein referred to as O. Reg. 153/04, at 1401 Bronte Road, in the Town of Oakville. The location of the subject site is shown on Drawing No. 1.

The scope of work of this Phase Two ESA was developed based on the findings of our Phase One ESA, Report Reference No. 1211-E073, dated January 4, 2013. Environmental concerns related to the materials used for construction are typically dealt with through the Occupational Health and Safety Act, and are not addressed as part of this assessment.

The objectives, methodology, analysis and conclusions of the Phase Two ESA are presented in this report.

2.1 Site Description

The subject site is located on the east side of Bronte Road, north of Highway 403. Fourteen Mile Creek lies to the north/northeast. A hydro corridor separates the west and east parts of the subject site. The description from the parcel registries for each parcel that contains portions of the subject site is given below:

PIN	Description From Parcel Register
25069 – 159 (LT)	PT LT 30, CON 2 TRAF SDS, PT 4, 20R6034 S&E PTS 1&2 20R12769 & PT LT 30 CON 2 TRAF SDS, PT1 20R12768 S&E PT 1 20R15746. S/T 74286. S/T EASE H840899 OVER PTS 12&16 20R13352. S/T EASE HR70019 OVER PT 1 20R13608; TOWN OF OAKVILLE;
25069 – 100 (LT)	PT LTS 28&29, CON 2 SDS, PT 11 20R6034 & PTS 1-2 20R12767; OAKVILLE. S/E EASE 840899 OVER PT 21 20R13352. S/T EASE HR70019 OVER PTS 3-4 20R13608

The property is irregular in shape and encompasses an approximate area of 40.9 ha (101.1 ac). The UTM coordinates for the approximate centroid of the subject site are 17T 601325 m East and 4808200 m North, as obtained from Google Earth which utilizes a 1983 North American Datum.

2.2 Property Ownership

This Phase Two ESA was commissioned to address the environmental liability in association with the proposed residential development in accordance with our proposal dated November 8, 2012, as authorized on December 11, 2012, by Mr. Michael Telawski of Bronte Green Corporation.

Our client and the owner of the subject site, can be contacted at:

Bronte Green Corporation
2123 Turnberry Road
Burlington, ON
L7M 4P8

Attention: Mr. Gord Buck

2.3 Current and Proposed Future Uses

The subject site consists of a commercial golf course (Saw Whet Golf Course) which encompasses the clubhouse, maintenance buildings and office.

A residential development is proposed for the subject site.

2.4 Application of Standards

A residential development is being proposed for the subject site. With the bedrock in the area at a depth approximately 8 m below ground surface (bgs), the site is not considered a shallow soil property, and the pH level of the subsurface soil is within the criteria (pH between 5 to 11) as outlined in O. Reg. 153/04. The site area under this assessment is not within 30 m of the adjacent Fourteen Mile Creek. The criteria used for the assessment are the Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for residential/parkland and institutional property uses. As no grain size analysis was conducted, coarse textured soils conditions will be applied to the subject site.

3.0 BACKGROUND

3.1 Physical Setting

The subject site is located in the Town of Oakville in the physiographical region known as the Iroquois Lake Plain, and is adjacent to Fourteen Mile Creek which lies to the north/northeast. A review of a Topographic Map, presented on Drawing No. 2, shows that precipitation runoff drains in an easterly direction towards Lake Ontario.

From our Phase One Report, the subject site is located within the Bronte Creek Watershed. It does not lie within a wellhead protection area. The bedrock in the area lies at a depth of approximately 8 mbgs, and the overburden soils consist of silty sand, silt and silty clay with a trace of gravel.

3.2 Past Investigations

Soil Engineers Ltd. conducted a Phase One ESA at the subject site, and the findings have been presented under separate cover. The assessment included a review of a Phase One Assessment report prepared by Soil Probe Ltd. (Report No. 2012-23820R, dated April 26, 2012).

Our Phase One ESA revealed the following items of environmental concern associated with the subject site:

- The subject site, Saw Whet Golf Course, is a registered waste generator associated with the on-site maintenance of golf course vehicles.
- Possible pesticide use as part of past farming activities and golf course maintenance.

- An electrical transformer station is located just beyond the north limit of the subject site adjacent to Upper Middle Road West.
- Above-ground Storage Tanks (ASTs) are located on the subject site.
- Fill material unknown environmental quality is present on the subject site.

A Phase Two ESA was recommended to assess the soil and groundwater conditions at the subject site with consideration to the above-mentioned environmental concerns.

A Phase One Conceptual Site Plan is shown on Drawing No. 3.

4.0 SCOPE OF INVESTIGATION

4.1 Overview of Site Investigation

The purpose of this investigation is to verify the chemical characteristics of the soil and groundwater at the subject site.

The assessment consisted of digging test pits, drilling boreholes and installing monitoring wells at select locations on the subject site to retrieve soil and groundwater samples for laboratory chemical analyses. (The findings of the boreholes and test pits at the areas along the creek are not included in this report but will be presented under separate cover.)

The rationale behind the selection of the borehole and test pit locations (at the subject area, which is not within 30 m of the adjacent Fourteen Mile Creek) is detailed in Tables 1 and 2, respectively.

Table 1 - Rationale for Borehole Sampling Locations

Borehole No.	Monitoring Well No.	Location	Rational	Tests Conducted
4	MW4	15 m west of maintenance storage building near waste disposal bins and 15 m east of Bronte Road	To assess soil and groundwater conditions with consideration to on-site waste generator, ASTs, and fill material	M&I, CCME F1-F4, VOCs and OCPs
5	MW5	4 m north of maintenance building near waste oil AST		M&I, CCME F1-F4, VOCs and OCPs
6	MW6	10 m east of maintenance building		M&I, CCME F1-F4, VOCs and OCPs
7	MW7	25 m north of south limit of site	To assess soil and groundwater conditions with consideration to on-site waste generator, ASTs, and pesticide use	M&I and CCME F1-F4

Table 2 - Rationale for Test Pit Sample Locations

Test Pit No.	Location	Rationale	Tests Conducted
2	1 m west of No. 1 green	To test the soil for pesticides, and assess the general environmental quality of the earth fill	M&I and OCP
3	1 m west of No. 2 green		M&I and OCP
6	1 m south of No. 3 fairway		M&I and OCP

4.2 Media Investigated

Given the potential contaminant types, and the physiological characteristics of the subject site, the soil and groundwater were tested using intrusive sampling techniques and the installation of monitoring wells for water sampling, generally downstream from the potential sources.

4.3 Phase One Conceptual Site Plan

The Phase One Conceptual Site Plan provided in the Phase One ESA report indicates the locations of the Potentially Contaminating Activities that could result in adverse environmental impacts on the soil and groundwater conditions at the subject site, as shown on Drawing Nos. 3.

4.4 Deviations

There is no deviation from the sampling and analysis plan based on our recommendations given in the Phase One ESA prepared by Soil Engineers Ltd. Therefore, the Phase Two ESA satisfies all the conditions set forth in the Phase One ESA.

5.0 INVESTIGATION METHOD

5.1 General

This Phase Two assessment utilized four boreholes, 4.3 m and 4.6 m deep, with a monitoring well installed in each borehole, and three test pits hand-dug to a depth of 0.5 m. The borehole and test pit locations are shown on Drawing No. 4. The boreholes and test pits were checked for the presence of fill material.

The sampling procedures, laboratory analytical methods, protocols and 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. 153/04.

The soil and groundwater samples were sent to AGAT Laboratories, accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA), for chemical analyses under the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA).

5.2 Drilling and Test Pitting

Prior to drilling the boreholes, the underground utility services were located and marked out in the field by G-Tel, Hydro One and Weir Environmental Ltd.

The field work was performed on December 18 and 19, 2012.

The boreholes were advanced to soil sampling depths by a Geoprobe 7820 drilling system equipped for soil sampling. The equipment was provided and operated by Strata Soil Sampling Inc. Soil samples were recovered from the boreholes using Shelby tubes for soil classification, visual and olfactory observations and field vapour readings. The drilling work was monitored by a SEL representative who recorded the findings and observations. The test pits were hand dug by a SEL representative to a depth of 0.5 m. The borehole and test pit logs are presented on Figures 1 to 7.

5.3 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 soil classification. Each sample submitted for CCME Petroleum Hydrocarbon (PHC) Fraction F1 and Volatile Organic Compounds (VOC) analysis was sampled by a Terracore (TM) sampler and placed into methanol charged vials. An additional soil sample in 200 mL jar was utilized for analysis of PHC Fractions F2 – F4 and soil moisture.

Based on visual and olfactory observations and field vapour readings, representative soil samples from each borehole were selected and sent to laboratory.

5.4 Groundwater Monitoring and Sampling

Once the final soil samples had been retrieved, a monitoring well was installed in each borehole by Strata Soil Sampling Inc. Monitoring well MW7 was constructed with a 50 mm diameter PVC screen, 3.0 m in length. Monitoring wells MW4, MW5 and MW6 were constructed with a 38 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 0.3 mbgs.

A flushmount casing, cemented in place, was installed at the surface of MW7, and a monument casing was installed at the surface of MW4, MW5 and MW6. After the monitoring well installation, the wells were purged by removing three well casing volumes of groundwater to allow for the influx of fresh formation water.

After the purging of the monitoring wells on December 19, 2012, sufficient lengths of low-density polyethylene tubing were used to sample water directly into laboratory supplied sample containers prepared with preservative for the analysis being conducted.

Groundwater monitoring was conducted at the site on December 28, 2012 and January 10, 2013, to determine qualitative and quantitative properties of the groundwater at the site. The groundwater level and temperature were measured and each well was purged of approximately 10 L (3.9 gallons) of water to ensure potential contamination from drilling was flushed out of the system.

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

6.0 REVIEW AND EVALUATION

Detailed descriptions of the encountered subsurface conditions are presented on the Borehole and Test Pit Logs, Figures 1 to 7.

The borehole and test pit findings have disclosed that beneath a layer of topsoil or existing asphaltic pavement, the subject site is predominantly underlain by sandy silt fill, silty sand till, sandy silt till and weathered shale.

7.1 Groundwater: Physical Characteristics and Flow Direction

The groundwater levels and physical characteristics of the groundwater monitored on December 28, 2012, are tabulated in Table 3.

Table 3 - Groundwater Levels and Physical Characteristics of Groundwater

Monitoring Well No.	Water Level		Temperature (°C)	Odour	Colour	LNAPL
	Depth (m)	Elevation (m)				
4	1.10	128.0	11.1	None	Clear	None
5	1.70	130.0	10.6	None	Clear	None
6	1.54	132.0	11.6	None	Clear	None
7	1.40	130.0	11.6	None	Opaque (light brown)	None

* LNAPL – Light Non-Aqueous Phase Liquid

Based on the topography of the subject site and the calculated groundwater elevations, groundwater flow is to the south, as shown on the Topographic Map, Drawing No. 2.

6.2 Soil Field Screening and Soil Quality

6.2 Soil Field Screening and Soil Quality

Based on visual and olfactory observations and field vapour readings, representative soil samples from each borehole were selected and sent to the laboratory for chemical analysis. A summary of the soil testing program is given in Table 4.

Table 4 - Soil Testing Program

Borehole No.	Sample ID	Lab ID	Sampling Interval Depth (m)	Soil Type	Test Conducted
BH-4	BH4/1	4045847	0.3 – 1.4	Sandy silt fill	OCP
	BH4/2	4045848	1.7 – 2.3	Silty sand till	M&I
	BH4/4	4045849	3.2 – 3.7	Silty sand till	PHC and VOC
BH-5	BH5/1	4045853	0.3 – 0.7	Silty sand fill	OCP, PHC and VOC
	BH5/4	4045858	2.8 – 3.0	Silty sand fill	M&I
BH-6	BH6/1	4045859	0 – 1.5	Sandy silt fill	OCP
	BH6/4	4045862	3.2 – 4.0	Silty sand fill	M&I
	BH6/5	4045868	4.1 – 4.6	Silty sand fill	PHC and VOC
BH-7	BH7/1	4045872	0.7 – 2.1	Silty sand till	PHC
	BH7/2	4045875	1.5 – 2.1	Silty sand till and shale	M&I
TP-2	TP2	4045827	0.5	Silty sand fill	M&I and OCP
TP-3	TP3	4045829	0.5	Silty sand fill	M&I and OCP
TP-6	TP6	4045835	0.5	Silty sand fill	M&I and OCP

A copy of the Certificates of Analysis for the soil samples is presented in Appendix 'A'.

A review of the soil analytical results indicates that the tested parameters in soil samples from all boreholes and test pits are below the reportable detection limits or within the Table 2 Standards.

6.3 Groundwater Quality

The wells were purged of water to ensure that no sediment or debris from the drilling was present in the sampled water. Groundwater samples were obtained from the monitoring wells by our representative on December 28, 2012 and January 10, 2013.

A summary of the groundwater testing program is given in Table 5.

Table 5 - Groundwater Testing Program

MW No.	Sample ID	Lab ID	Test Conducted
4	MW4	4050993	M&I, OCP, VOC and PHC
5	MW5	4051006	M&I, OCP, VOC and PHC
		4061769	VOC
6	MW6	4051021	M&I, OCP, VOC and PHC
7	MW7	4051036	M&I & OCP
		4061767	PHC

A copy of the Certificates of Analysis for the groundwater samples is presented in Appendix 'B'.

A review of the analytical results for the groundwater indicates that the tested parameters are below the reportable detection limits or within the Table 2 Standards.

6.4 QA/QC Results

(i) QA/QC Soil Results

A field duplicate for a selected soil sample was submitted for analysis of Metals and Inorganics (M&I). A trip blank was submitted for analysis of Volatile Organic Compounds (VOCs) to determine if matrix interference occurred during the sample transportation to the laboratory, in accordance with the criteria under the EPA. The QA/QC soil testing programme is detailed in Table 6.

Table 6 - QA/QC Soil Testing Programme

Original Sample ID	Sample ID	Lab ID	Depth (mbgs)	Soil Type	Test Conducted
BH6/4	Dup 2	4045842	3.2 – 4.0	Silty Sand Fill	M&I
-	Trip Blank	4045878	-	-	VOC

The Certificate of Analysis for the QA/QC soil samples is included in Appendix 'A'.

Based on the laboratory results, the result of the analysis of the QA/QC soil samples shows that the tested parameters yielded a similar result to the original samples with minimal matrix interference.

(ii) QA/QC Groundwater Results

Field duplicates for selected groundwater samples were submitted for analyses for VOC and PHC. Trip blanks were submitted for analysis for VOC to determine if matrix interference occurred during the sample transportation to the laboratory in accordance with the criteria under the EPA. The QA/QC testing groundwater testing programme is detailed in Table 7.

Table 7 - QA/QC Groundwater Testing Programme

MW No.	Sample ID	Lab ID	Test Conducted
MW5	Dup 4	4061776	VOC
MW7	Dup 3	4061772	PHC
-	Trip Blank	4048544	VOC
-	Trip Blank	4061779	VOC

The Certificate of Analysis for the QA/QC groundwater samples is included in Appendix 'B'.

Based on the laboratory results, the result of the analysis of the QA/QC groundwater samples shows that the tested parameters yielded a similar result to the original samples with minimal matrix interference.

6.5 Phase Two Conceptual Site Plan

The analytical results for the soil and groundwater show the tested parameters meet the Table 2 site condition standards.

A Phase Two Conceptual Site Plan is presented on Drawing No. 5.

7.0 SUMMARY

We have completed a Phase Two ESA for the subject site. The results of analyses of soil and groundwater samples indicate the tested parameters meet the Table 2 potable groundwater site condition standards for residential/parkland/institutional property usage.

Based on the findings and results of our Phase One and Phase Two assessments, there are no environmental concerns associated with the subject site at this time. As such, we consider the site to be suitable for the proposed residential development.

SOIL ENGINEERS LTD.

Andrejs Jansons, B.Eng., EIT

Ian Chiu, P.Eng., QPESA

LICENSED PROFESSIONAL ENGINEER
I. S. CHIU
Oct. 25, 2013
PROVINCE OF ONTARIO

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8.0 QUALIFICATIONS

Soil Engineers Ltd., formerly known as Soil-Eng Limited (founded in 1976), offers to its clients a range of specialized engineering services. Our company is staffed with both engineers and scientists who draw upon their combined experience to provide a team approach to problem solving. Specifically, our environmental division employs more than 10 people who are trained to understand the Ontario Ministry of the Environment regulations. We play an integral role in the development of industrial, commercial, institutional and residential subdivisions, complexes, structures, and their related infrastructures, by providing our clients with the needed expertise for their projects.

This report and its assessment was prepared by Mr. Andrejs Jansons. He has a Bachelor of Engineering degree from the University of Guelph and is an Engineer in Training (EIT No. 100133900) in Ontario. He has been trained to conduct Phase One and Two Environmental Site Assessments in accordance with the MOE Standard.

Mr. Ian Chiu is the Vice-President of Soil Engineers Ltd. He has a Bachelor's Degree in Applied Science (Civil) from the University of Toronto and is licensed to practice in Ontario (PEO Licence No. 8113706). He has 25 years of experience on various building and engineering projects in Ontario. He supervises the Environmental Services Section, has a comprehensive understanding of its projects, and is responsible for over 500 Phase One and Phase Two ESA reports with over 250 Records of Site Condition acknowledged by the MOE.

Approximate Site Location

Source: Google Earth
© 2012

Soil Engineers Ltd.

Title
Site Location Plan

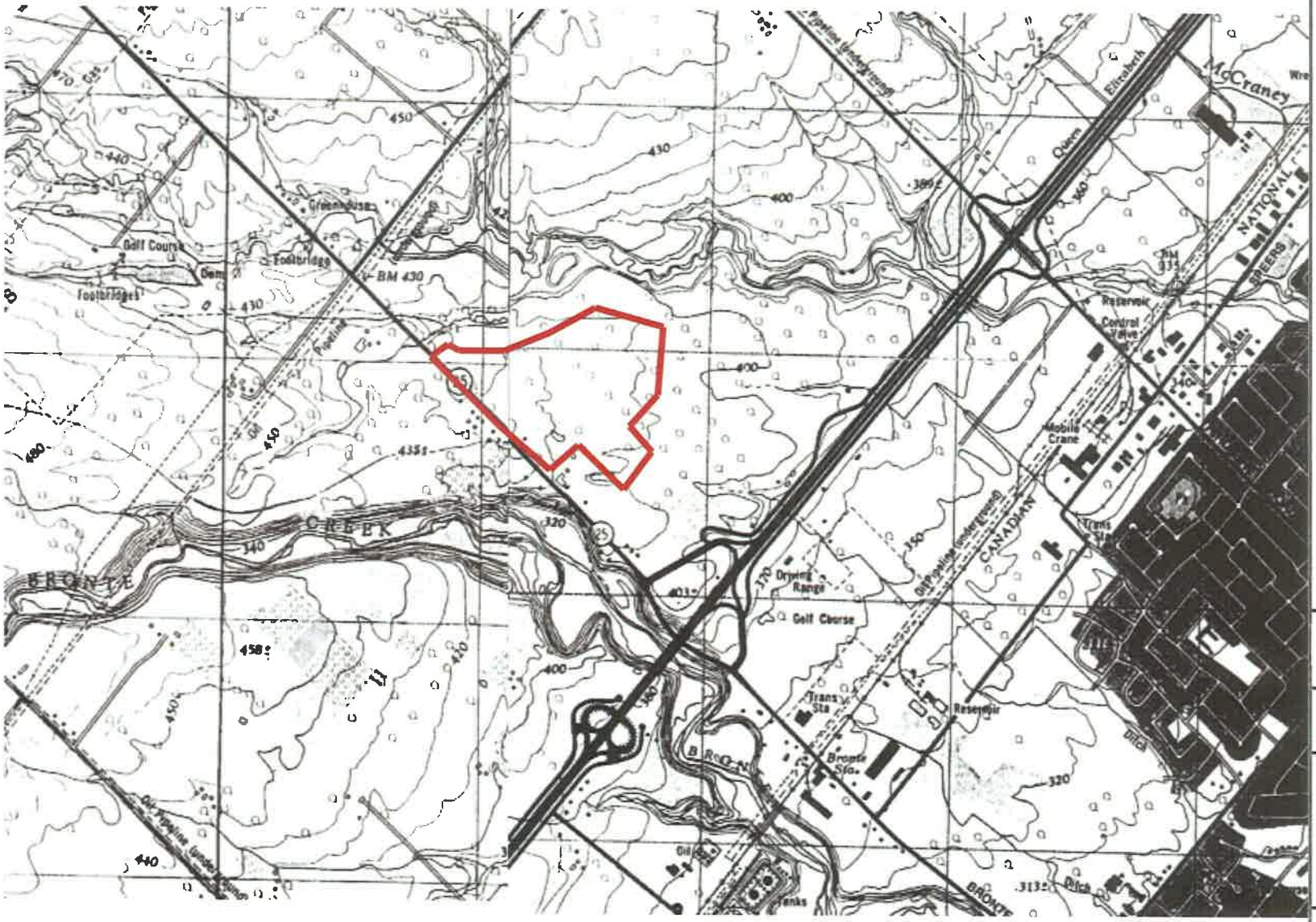
Project
Proposed Residential Development
Existing Golf Course
1401 Bronte Road
Town of Oakville

Reference No.
1211-E073

Date
October 4, 2013

Scale
-

Drawing No.
1

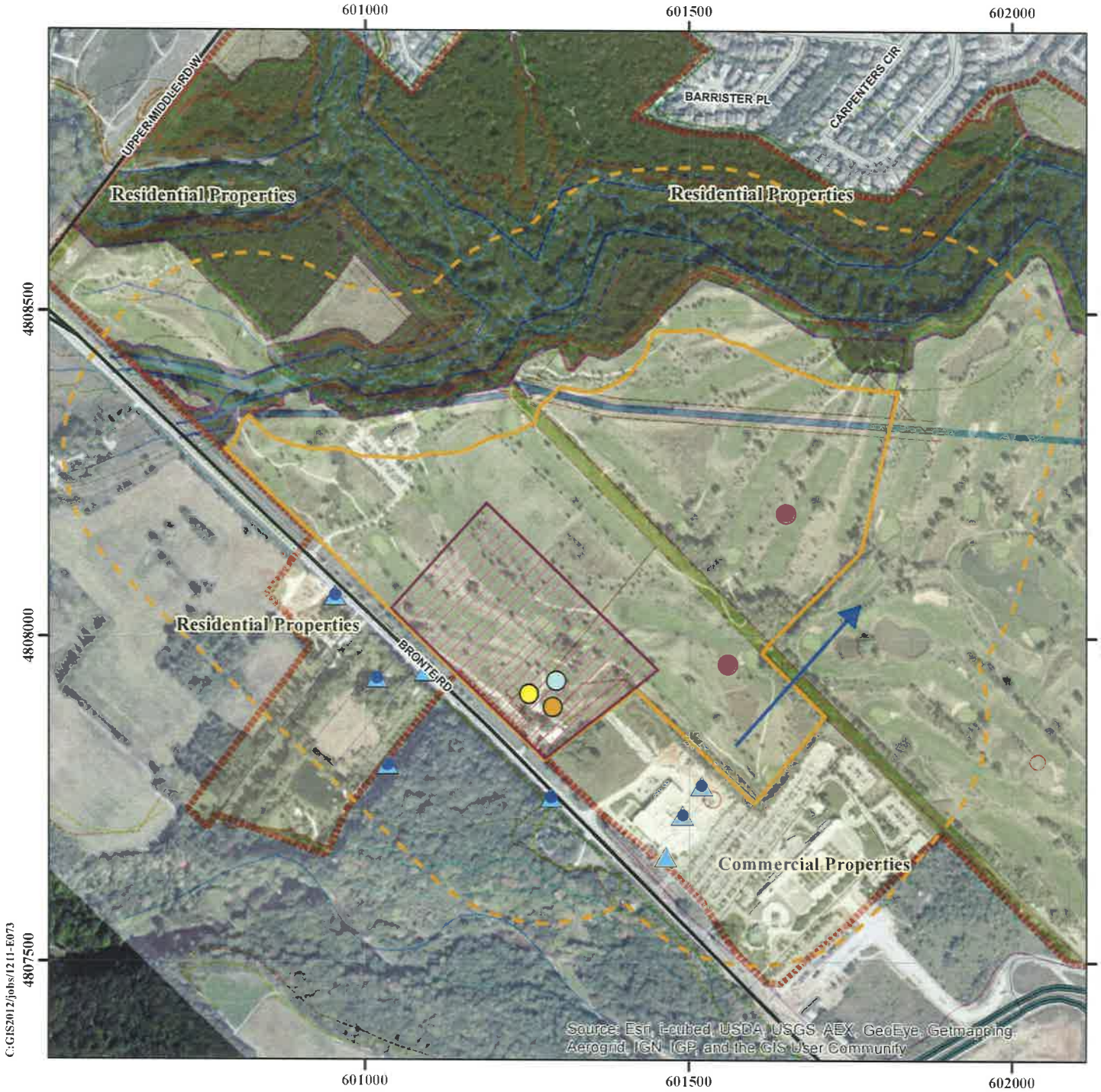


Approximate Site Location

Source: Ministry of Natural Resources
@ 1972

Soil Engineers Ltd.

Title	1972 Topographic Map
Project	Proposed Residential Development Existing Golf Course 1401 Bronte Road Town of Oakville
Reference No.	1211-E073
Date	October 4, 2013
Scale	1:25000
Drawing No.	2



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- Approximate Boundary of Phase Two Property
- Approximate Boundary of Phase Two Study Area
- Former Orchard
- Water Well Location from EcoLog
- Water Well Location from Well Help Desk MOE
- Waste Generators
- ASTs
- Pesticides
- Fill Materials
- Assumed Groundwater Flow Direction
- Expressway
- Major Road
- Local Road

Soil Engineers Ltd.

Title: Phase One Conceptual Site Plan

Project:

Proposed Residential Development
Existing Golf Course
1401 Bronte Road
Town of Oakville

Reference No. 1211-E073

Date: October 4, 2013

Scale:

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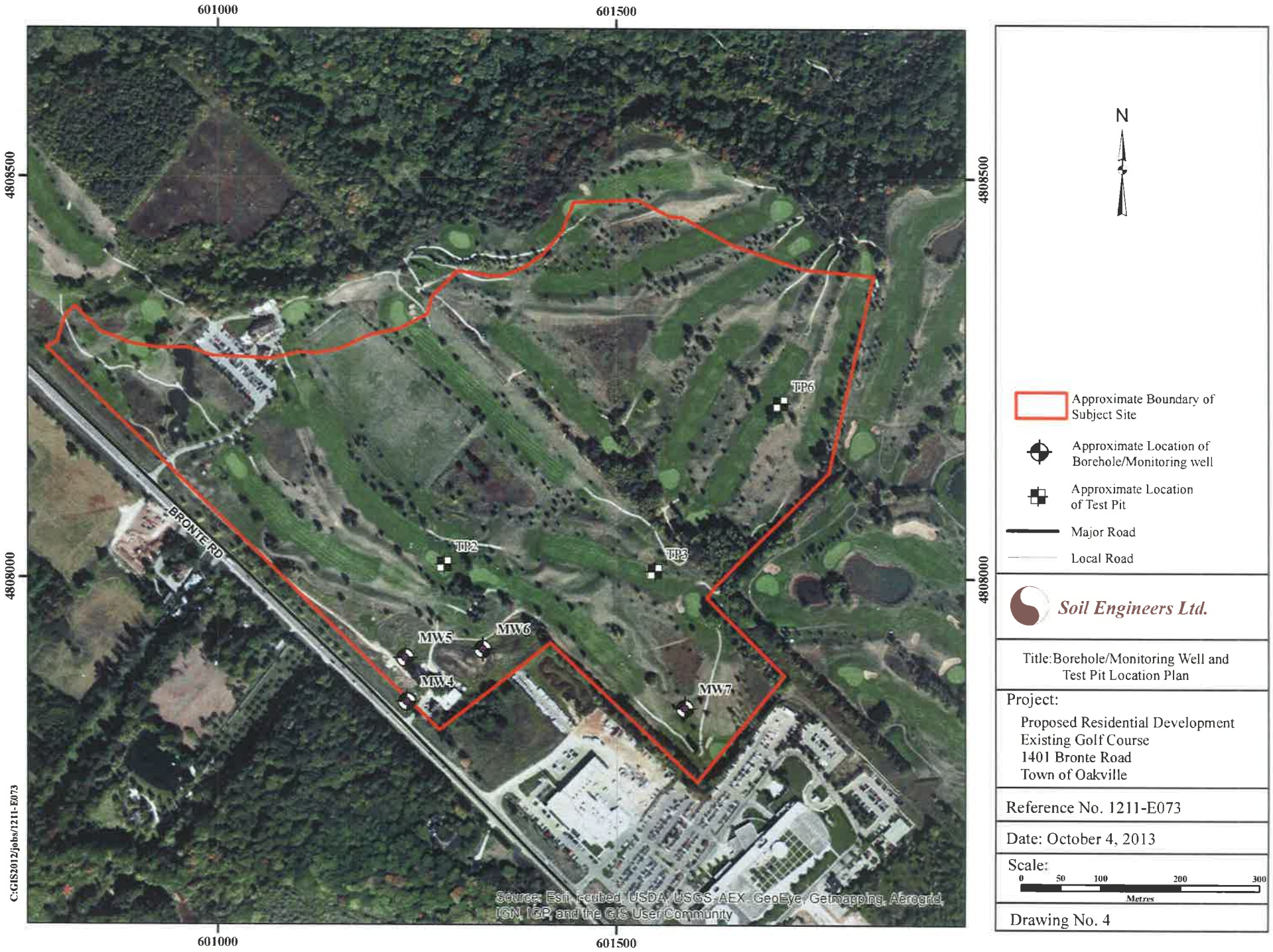
Metres

Drawing No. 3


601000
601500
4808500
4808000
BRONTE RD
TP2
TP3
TP6
MW4
MW5
MW6
MW7
Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
C:GIS2012/jobs/1211-E073
N
Approximate Boundary of Subject Site
Approximate Location of Borehole/Monitoring well
Approximate Location of Test Pit
Major Road
Local Road
Soil Engineers Ltd.
Title:Borehole/Monitoring Well and Test Pit Location Plan
Project:
Proposed Residential Development
Existing Golf Course
1401 Bronte Road
Town of Oakville
Reference No. 1211-E073
Date: October 4, 2013
Scale:
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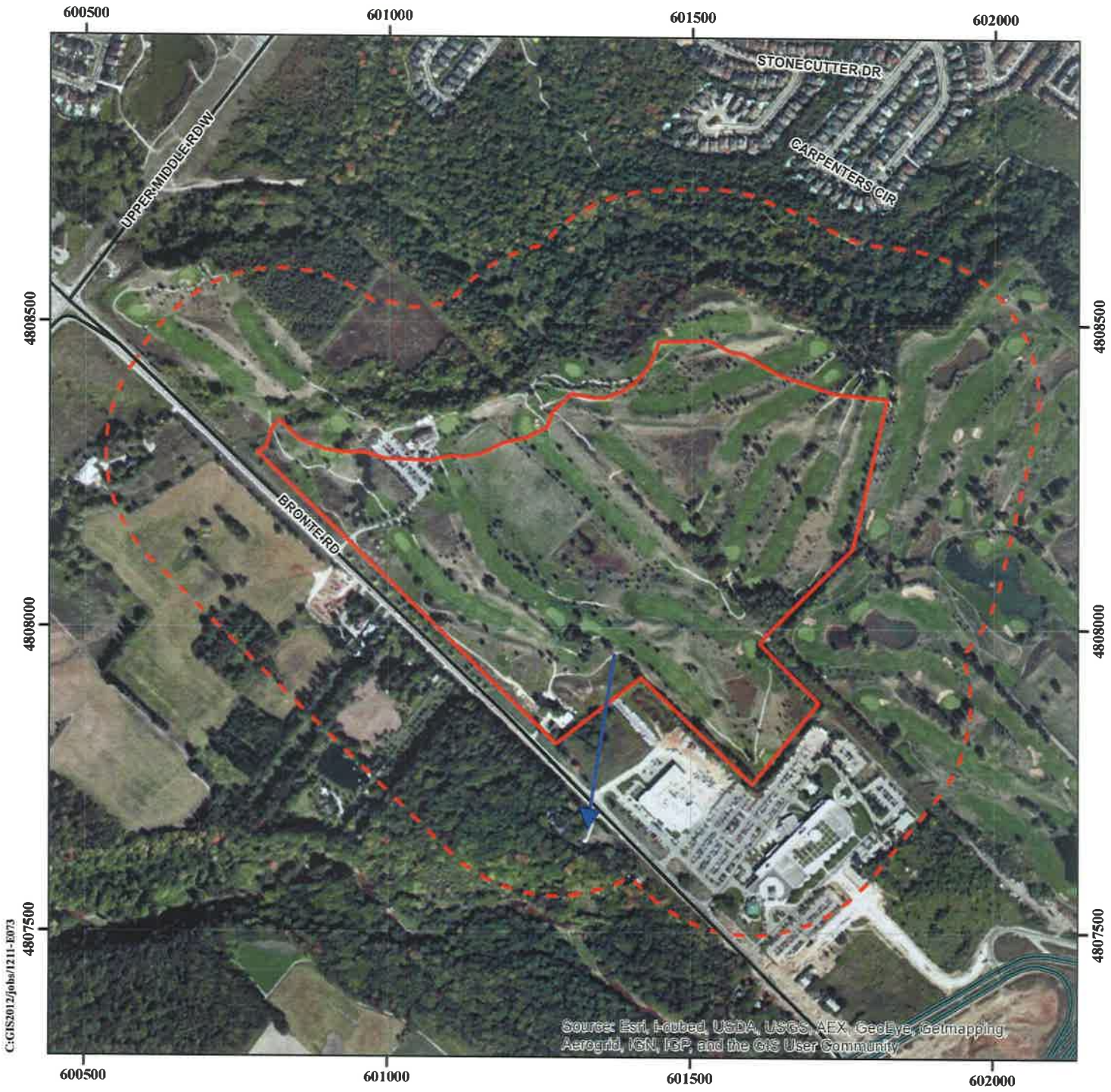
Metres
Drawing No. 4



N

Approximate Boundary of Phase Two Property

Approximate Boundary of Phase Two Study Area

Groundwater Flow Direction

Expressway

Major Road

Local Road

Soil Engineers Ltd.

Title: Phase Two Conceptual Site Plan

Project:

Proposed Residential Development
Existing Golf Course
1401 Bronte Road
Town of Oakville

Reference No. 1211-E073

Date: October 4, 2013

Scale: 0 50 100 200 300 400 Metres

Drawing No. 5

9.0 REFERENCES

Information in the Public Domain

Environmental Protection Act (EPA). Part VII and VIII 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 MOE. (1996)

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

Ministry of Natural Resources, 2008, Topographic Map (2012)
Google Earth, 2011, Aerial Photograph (2012)
2010 Ontario Geological Survey (2012)

JOB NO: 1211-E073

LOG OF BOREHOLE NO: BH/MW4

FIGURE NO: 1

JOB DESCRIPTION: Existing Golf Course

JOB LOCATION: 1401 Bronte Road
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	12.5 25.0 37.5		
128.0	Brown **SANDY SILT, Fill**	1	TO	0	1	0	BH4/1: OCP	
0.9 127.1	**SILTY SAND, Till** Occ. wet silt seams and layers, cobbles and boulders	2	TO	20	2	20	BH4/2: M&Is	
		3	TO	10	3	10		
	brown / grey	4	TO	30		30	BH4/4: VOCs and PHC	
		5	TO	10	4	10		
4.6 123.4	**END OF BOREHOLE** Installed 38 mm diameter standpipe to 4.5 m. Sand backfill from 1.1 to 4.5 m. Bentonite seal from 0.5 to 1.1 m. Concrete from 0.0 to 0.5 m. 3 m screen from 1.5 to 4.5 m. Provided with a monument casing.				5 6 7 8			W.L. @ a depth of 1.1 m at the time of sampling

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF BOREHOLE NO: BH/MW5

FIGURE NO: 2

JOB DESCRIPTION: Existing Golf Course

JOB LOCATION: 1401 Bronte Road
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	12.5 25.0 37.5		
130.0 0.3	Brown **SANDY SILT, Fill**							
129.7	**SILTY SAND, Fill**	1	TO	15		15	BH5/1: VOCs, PHC and OCP	
		2	TO	0	1			
		3	TO	0	2			
		4	TO	10	3	10	BH5/4: M&Is	
	brown grey	5	TO	0	4			
4.6								
125.4	**END OF BOREHOLE**				5			
	Installed 38 mm diameter standpipe to 4.5 m. Sand backfill from 1.1 to 4.5 m. Bentonite seal from 0.5 to 1.1 m. Concrete from 0.0 to 0.5 m. 3 m screen from 1.5 to 4.5 m. Provided with a monument casing.				6			
					7			
					8			

W.L. @ a depth of 1.7 m at the time of sampling

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF BOREHOLE NO: BH/MW6

FIGURE NO: 3

JOB DESCRIPTION: Existing Golf Course

JOB LOCATION: 1401 Bronte Road
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	12.5 25.0 37.5		
132.0	Brown **SANDY SILT, FIII**							
0.8		1	TO	0	1		BH6/1: OCP	
131.2	**SILTY SAND, FIII**							
		2	TO	5	2	5		
		3	TO	0	3			
		4	TO	0	4		BH6/4: M&Is	
	brown / grey	5	TO	5		5	BH6/5: VOCs and PHC	
4.6								
127.4	**END OF BOREHOLE**				5			
	Installed 38 mm diameter standpipe to 4.5 m. Sand backfill from 1.1 to 4.5 m. Bentonite seal from 0.5 to 1.1 m. Concrete from 0.0 to 0.5 m. 3 m screen from 1.5 to 4.5 m. Provided with a monument casing.				6			
					7			
					8			

W.L. @ a depth of 1.5 m at the time of sampling

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF BOREHOLE NO: BH/MW7

FIGURE NO: 4

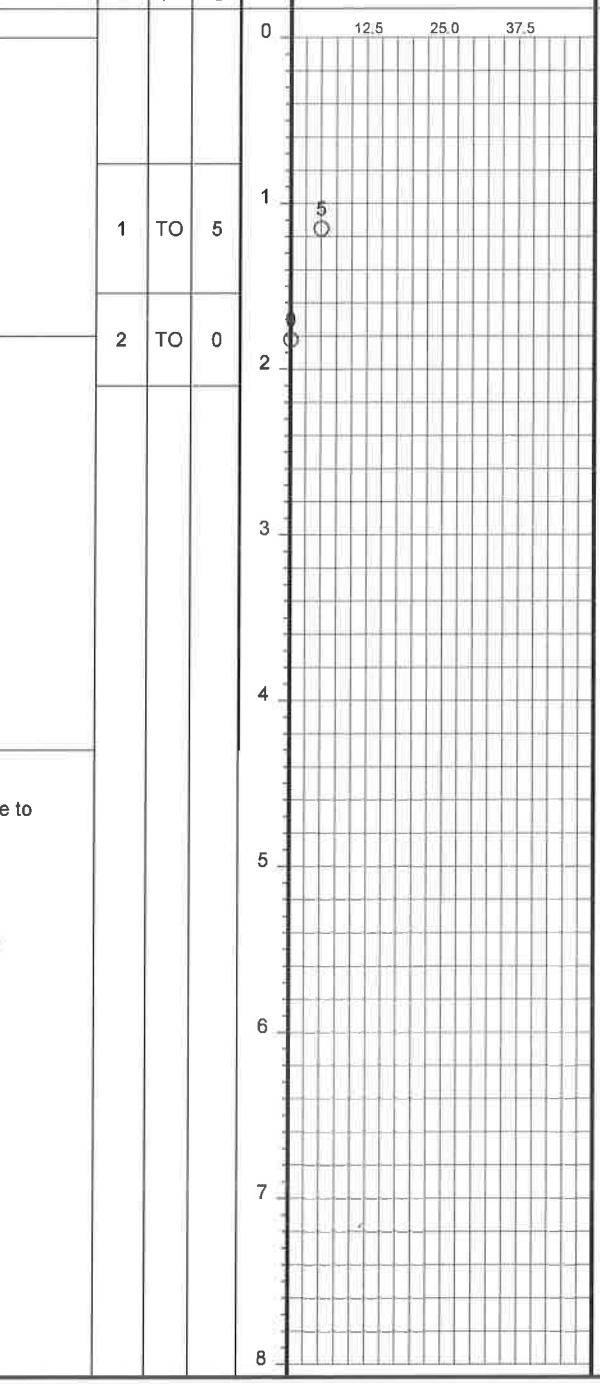
JOB DESCRIPTION: Existing Golf Course

JOB LOCATION: 1401 Bronte Road
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)	Comment
0.0	Ground Surface				
130.0	Brown **SILTY SAND, Till** Occ. silt seams and layers, cobbles and boulders				
		1	TO	5	BH7/1: PHC
1.8					
128.2	Brown **WEATHERED SHALE**	2	TO	0	BH7/2: M&Is
4.3					
125.7	**END OF BOREHOLE** Installed 50 mm diameter standpipe to 4.2 m. Sand backfill from 1.1 to 4.2 m. Bentonite seal from 0.5 to 1.1 m. Concrete from 0.0 to 0.5 m. 3 m screen from 1.2 to 4.2 m. Provided with a monument casing.				



Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF TEST PIT NO: TP2

FIGURE NO: 5

JOB DESCRIPTION: Existing Golf Course

JOB LOCATION: 1401 Bronte Road
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	10 20 30 40		
0.2	**150mm TOPSOIL**							
	SILTY SAND, Fill	1	CS	5		5	M&Is and OCP	
0.8	**END OF TEST PIT**				1			
					2			
					3			

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF TEST PIT NO: TP3

FIGURE NO: 6

JOB DESCRIPTION: Existing Golf Course

JOB LOCATION: 1401 Bronte Road
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	10 20 30 40		
0.2	**150mm TOPSOIL**							
	SILTY SAND, Fill	1	CS	0			M&Is and OCP	
0.8	**END OF TEST PIT**				1			
					2			
					3			

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF TEST PIT NO: TP6

FIGURE NO: 7

JOB DESCRIPTION: Existing Golf Course

JOB LOCATION: 1401 Bronte Road
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	10 20 30 40		
0.2	**150mm TOPSOIL**							
	SILTY SAND, Fill	1	CS	5		50	M&Is and OCP	
0.8	**END OF TEST PIT**				1			
					2			
					3			

Soil Engineers Ltd.

Soil Engineers Ltd.
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APPENDIX 'A'

CERTIFICATES OF ANALYSIS
(SOIL SAMPLES AND QA/QC SAMPLE)

REFERENCE NO. 1211-E073

AGAT Laboratories

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CLIENT NAME: SOIL ENGINEERS LIMITED
100 NUGGET AVENUE
TORONTO, ON M1S3A7
(416) 754-8515

ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T675486

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

TRACE ORGANICS REVIEWED BY: Jacky Takeuchi, BScH (Chem Eng), BSc (Bio), C.Chem, Laboratory Manager

DATE REPORTED: Dec 31, 2012

PAGES (INCLUDING COVER): 16

VERSION*: 5

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES
VERSION 5:
Reporting Samples TP2, TP3, TP6, DUP1, BH4, BH5, BH6, BH7 and Trip Blank compared to table 2 (RPI) (July 10th 2013)

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12T675486
PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		TP2	TP3	TP6	BH 4/2	BH 5/4	BH 6/4	BH 7/2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045827	4045829	4045835	4045848	4045858	4045862	4045875
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	4	3	4	3	2	4
Barium	µg/g	390	2	80	114	81	33	61	19	135
Beryllium	µg/g	4	0.5	0.6	0.8	0.5	<0.5	<0.5	<0.5	0.8
Boron	µg/g	120	5	<5	<5	7	5	6	<5	17
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.37	0.53	0.28	<0.10	<0.10	<0.10	0.18
Cadmium	µg/g	1.2	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	24	23	17	9	14	6	25
Cobalt	µg/g	22	0.5	8.1	7.9	9.5	5.2	7.4	3.7	14.3
Copper	µg/g	140	1	18	27	24	33	22	14	9
Lead	µg/g	120	1	19	23	18	12	8	5	11
Molybdenum	µg/g	6.9	0.5	0.8	<0.5	0.5	<0.5	<0.5	<0.5	1.2
Nickel	µg/g	100	1	17	18	20	11	15	6	36
Selenium	µg/g	2.4	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	20	0.2	0.3	0.4	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	1.0	<0.5	<0.5	0.6	<0.5	0.6
Vanadium	µg/g	86	1	26	29	22	15	20	11	31
Zinc	µg/g	340	5	65	103	244	38	41	20	68
Chromium VI	µg/g	8	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.104	0.126	0.190	0.095	0.171	0.080	0.128
Sodium Adsorption Ratio	NA	5	NA	0.058	0.109	0.043	0.066	0.132	0.092	0.197
pH, 2:1 CaCl2 Extraction	pH Units		NA	6.53	6.45	7.34	7.79	7.79	7.88	7.80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current
4045827-4045875 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Elizabeth Polakowska

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		TP2	TP3	TP6	DUP 1	BH 4/1	BH 5/1	BH 6/1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045827	4045829	4045835	4045837	4045847	4045853	4045859
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.065	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.021	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	23.5	23.8	24.2	25.0	11.7	12.5	15.5
Surrogate	Unit	Acceptable Limits								
TCMX	%	50-140		56	72	76	64	61	68	61
Decachlorobiphenyl	%	60-130		60	74	78	80	79	68	69

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

4045827-4045859 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By: Jacky Takeuchi

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AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		BH 4/4	BH 5/1	BH 6/5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045849	4045853	4045868
F1 (C6 to C10)	µg/g		5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA
Moisture Content	%		0.1	20.2	12.0	16.9
Surrogate	**Unit**	**Acceptable Limits**				
Terphenyl	%	60-140		94	82	135

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

4045849-4045868 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By: Joshy Takenaka

AGAT Laboratories

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AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		BH 7/1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		12/18/2012
Parameter	Unit	G / S	RDL	4045872
Benzene	µg/g	0.21	0.02	<0.02
Toluene	µg/g	2.3	0.08	<0.08
Ethylbenzene	µg/g	1.1	0.05	<0.05
Xylene Mixture	µg/g	3.1	0.05	<0.05
F1 (C6 to C10)	µg/g		5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	13.6
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

4045872
Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Certified By: Jacky Takeuchi

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AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		BH 4/4	BH 5/1	BH 6/5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045849	4045853	4045866
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.47	0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	1.9	0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	1.5	0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	2.3	0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	1.1	0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.27	0.05	<0.05	<0.05	<0.05

Certified By: Jacky Takeuchi

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Certificate of Analysis

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		BH 4/4	BH 5/1	BH 6/5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045849	4045853	4045868
Styrene	ug/g	0.7	0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	1.2	0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	50-140		91	95	95
4-Bromofluorobenzene	% Recovery	50-140		95	101	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

4045849-4045868 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By: Jacky Takeuchi

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AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

VOCs (Soil) - Methanol Trip Blank

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		Trip Blank
		SAMPLE TYPE:		MeOH
		DATE SAMPLED:		12/18/2012
Parameter	Unit	G / S	RDL	4046878
Dichlorodifluoromethane	µg/g		0.05	<0.05
Vinyl Chloride	ug/g		0.02	<0.02
Bromomethane	ug/g		0.05	<0.05
Trichlorofluoromethane	ug/g		0.05	<0.05
Acetone	ug/g		0.50	<0.50
1,1-Dichloroethylene	ug/g		0.05	<0.05
Methylene Chloride	ug/g		0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g		0.05	<0.05
Methyl tert-butyl Ether	ug/g		0.05	<0.05
1,1-Dichloroethane	ug/g		0.02	<0.02
Methyl Ethyl Ketone	ug/g		0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g		0.02	<0.02
Chloroform	ug/g		0.04	<0.04
1,2-Dichloroethane	ug/g		0.03	<0.03
1,1,1-Trichloroethane	ug/g		0.05	<0.05
Carbon Tetrachloride	ug/g		0.05	<0.05
Benzene	ug/g		0.02	<0.02
1,2-Dichloropropane	ug/g		0.03	<0.03
Trichloroethylene	ug/g		0.03	<0.03
Bromodichloromethane	ug/g		0.05	<0.05
Methyl Isobutyl Ketone	ug/g		0.50	<0.50
1,1,2-Trichloroethane	ug/g		0.04	<0.04
Toluene	ug/g		0.05	<0.05
Dibromochloromethane	ug/g		0.05	<0.05
Ethylene Dibromide	ug/g		0.04	<0.04
Tetrachloroethylene	ug/g		0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g		0.04	<0.04
Chlorobenzene	ug/g		0.05	<0.05
Ethylbenzene	ug/g		0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05
Bromoform	ug/g		0.05	<0.05

Certified By: Jacky Takeuchi

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Certificate of Analysis

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

VOCs (Soil) - Methanol Trip Blank

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		Trip Blank
		SAMPLE TYPE:		MeOH
		DATE SAMPLED:		12/18/2012
Parameter	Unit	G / S	RDL	4045878
Styrene	ug/g		0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g		0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g		0.05	<0.05
1,4-Dichlorobenzene	ug/g		0.05	<0.05
1,2-Dichlorobenzene	ug/g		0.05	<0.05
Xylene Mixture	ug/g		0.05	<0.05
1,3-Dichloropropene	µg/g		0.04	<0.04
n-Hexane	µg/g		0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		92
4-Bromofluorobenzene	% Recovery	50-140		102

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4045878 A small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed.

Certified By: Jacky Takeuchi

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CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Soil Analysis

RPT Date: Dec 31, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1	4045826	< 0.8	< 0.8	0.0%	< 0.8	110%	70%	130%	108%	80%	120%	101%	70%	130%
Arsenic	1	4045826	6	6	0.0%	< 1	101%	70%	130%	109%	80%	120%	104%	70%	130%
Barium	1	4045826	90	86	4.5%	< 2	100%	70%	130%	101%	80%	120%	94%	70%	130%
Beryllium	1	4045826	1.0	1.0	0.0%	< 0.5	100%	70%	130%	99%	80%	120%	94%	70%	130%
Boron	1	4045826	5	5	0.0%	< 5	75%	70%	130%	98%	80%	120%	94%	70%	130%
Boron (Hot Water Soluble)	1	4045826	0.30	0.29	4.1%	< 0.10	124%	60%	140%	107%	70%	130%	103%	60%	140%
Cadmium	1	4045826	< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	120%	80%	120%	105%	70%	130%
Chromium	1	4045826	26	25	3.9%	< 2	99%	70%	130%	109%	80%	120%	101%	70%	130%
Cobalt	1	4045826	13.2	13.3	0.8%	< 0.5	99%	70%	130%	103%	80%	120%	98%	70%	130%
Copper	1	4045826	32	33	3.1%	< 1	100%	70%	130%	115%	80%	120%	108%	70%	130%
Lead	1	4045826	19	19	0.0%	< 1	101%	70%	130%	109%	80%	120%	103%	70%	130%
Molybdenum	1	4045826	0.5	0.5	0.0%	< 0.5	105%	70%	130%	107%	80%	120%	104%	70%	130%
Nickel	1	4045826	29	28	3.5%	< 1	99%	70%	130%	102%	80%	120%	97%	70%	130%
Selenium	1	4045826	< 0.4	< 0.4	0.0%	< 0.4	104%	70%	130%	103%	80%	120%	105%	70%	130%
Silver	1	4045826	< 0.2	< 0.2	0.0%	< 0.2	102%	70%	130%	113%	80%	120%	113%	70%	130%
Thallium	1	4045826	< 0.4	< 0.4	0.0%	< 0.4	98%	70%	130%	107%	80%	120%	96%	70%	130%
Uranium	1	4045826	0.6	0.6	0.0%	< 0.5	100%	70%	130%	102%	80%	120%	101%	70%	130%
Vanadium	1	4045826	35	34	2.9%	< 1	104%	70%	130%	106%	80%	120%	98%	70%	130%
Zinc	1	4045826	84	81	3.6%	< 5	100%	70%	130%	119%	80%	120%	105%	70%	130%
Chromium VI	1	4045826	< 0.2	< 0.2	0.0%	< 0.2	93%	70%	130%	93%	80%	120%	95%	70%	130%
Cyanide	1	4045848	< 0.040	< 0.040	0.0%	< 0.040	103%	70%	130%	102%	80%	120%	108%	70%	130%
Mercury	1	4045826	< 0.10	< 0.10	0.0%	< 0.10	109%	70%	130%	105%	80%	120%	92%	70%	130%
Electrical Conductivity (2:1)	1	4045826	0.118	0.112	5.2%	< 0.005	99%	90%	110%	NA			NA		
Sodium Adsorption Ratio	1	4045826	0.074	0.079	6.5%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1	4045843	7.76	7.77	0.1%	NA	98%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.

Certified By: Elizabeth Rolakowska

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CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis

RPT Date: Dec 31, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	91%	50%	140%	85%	50%	140%	63%	50%	140%
Heptachlor	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	98%	50%	140%	79%	50%	140%	58%	50%	140%
Aldrin	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	96%	50%	140%	73%	50%	140%	58%	50%	140%
Heptachlor Epoxide	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	76%	50%	140%	62%	50%	140%
Endosulfan	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	75%	50%	140%	60%	50%	140%
Chlordane	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	95%	50%	140%	73%	50%	140%	63%	50%	140%
DDE	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	97%	50%	140%	75%	50%	140%	66%	50%	140%
DDD	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	98%	50%	140%	72%	50%	140%	64%	50%	140%
DDT	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	103%	50%	140%	74%	50%	140%	60%	50%	140%
Dieldrin	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	94%	50%	140%	72%	50%	140%	60%	50%	140%
Endrin	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	88%	50%	140%	73%	50%	140%	66%	50%	140%
Methoxychlor	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	83%	50%	140%	75%	50%	140%	63%	50%	140%
Hexachlorobenzene	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	101%	50%	140%	78%	50%	140%	65%	50%	140%
Hexachlorobutadiene	1	4045847	< 0.01	< 0.01	0.0%	< 0.01	104%	50%	140%	82%	50%	140%	56%	50%	140%
Hexachloroethane	1	4045847	< 0.01	< 0.01	0.0%	< 0.01	88%	50%	140%	94%	50%	140%	60%	50%	140%
O. Reg. 153(511) - PCBs (Soil)															
Aroclor 1242	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Polychlorinated Biphenyls	1		< 0.1	< 0.1	0.0%	< 0.1	107%	60%	140%	89%	60%	140%	79%	60%	140%
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	111%	50%	140%	106%	60%	130%	82%	50%	140%
Toluene	1		< 0.08	< 0.08	0.0%	< 0.08	105%	50%	140%	103%	60%	130%	79%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	106%	60%	130%	83%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	106%	50%	140%	106%	60%	130%	83%	50%	140%
F1 (C6 to C10)	1		< 5	< 5	0.0%	< 5	85%	60%	140%	84%	80%	120%	76%	60%	140%
F2 (C10 to C16)	1		< 10	< 10	0.0%	< 10	107%	60%	140%	105%	80%	120%	70%	60%	140%
F3 (C16 to C34)	1		< 50	< 50	0.0%	< 50	116%	60%	140%	112%	80%	120%	77%	60%	140%
F4 (C34 to C50)	1		< 50	< 50	0.0%	< 50	86%	60%	140%	99%	80%	120%	92%	60%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	85%	50%	140%	85%	50%	140%
Vinyl Chloride	1		< 0.02	< 0.02	0.0%	< 0.02	94%	50%	140%	87%	50%	140%	86%	50%	140%
Bromomethane	1		< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	101%	50%	140%	105%	50%	140%
Trichlorofluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	113%	50%	140%	112%	50%	140%	123%	50%	140%
Acetone	1		< 0.50	< 0.50	0.0%	< 0.50	104%	50%	140%	100%	50%	140%	88%	50%	140%
1,1-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	108%	50%	140%	126%	60%	130%	120%	50%	140%
Methylene Chloride	1		< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	121%	60%	130%	118%	50%	140%
Trans- 1,2-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	119%	60%	130%	119%	50%	140%

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CLIENT NAME: SOIL ENGINEERS LIMITED | **AGAT WORK ORDER: 12T675486**

PROJECT NO: 1211-E073 | **ATTENTION TO: Andrejs Jansons**

Trace Organics Analysis (Continued)

RPT Date: Dec 31, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methyl tert-butyl Ether	1		< 0.05	< 0.05	0.0%	< 0.05	68%	50%	140%	91%	60%	130%	84%	50%	140%
1,1-Dichloroethane	1		< 0.02	< 0.02	0.0%	< 0.02	97%	50%	140%	127%	60%	130%	124%	50%	140%
Methyl Ethyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	90%	50%	140%	101%	50%	140%	109%	50%	140%
Cis- 1,2-Dichloroethylene	1		< 0.02	< 0.02	0.0%	< 0.02	85%	50%	140%	99%	60%	130%	104%	50%	140%
Chloroform	1		< 0.04	< 0.04	0.0%	< 0.04	110%	50%	140%	125%	60%	130%	123%	50%	140%
1,2-Dichloroethane	1		< 0.03	< 0.03	0.0%	< 0.03	104%	50%	140%	124%	60%	130%	126%	50%	140%
1,1,1-Trichloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	103%	50%	140%	107%	60%	130%	123%	50%	140%
Carbon Tetrachloride	1		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	128%	60%	130%	116%	50%	140%
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	77%	50%	140%	109%	60%	130%	114%	50%	140%
1,2-Dichloropropane	1		< 0.03	< 0.03	0.0%	< 0.03	92%	50%	140%	120%	60%	130%	129%	50%	140%
Trichloroethylene	1		< 0.03	< 0.03	0.0%	< 0.03	113%	50%	140%	119%	60%	130%	125%	50%	140%
Bromodichloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	116%	50%	140%	116%	60%	130%	111%	50%	140%
Methyl Isobutyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	73%	50%	140%	78%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	124%	50%	140%	109%	60%	130%	127%	50%	140%
Toluene	1		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	82%	60%	130%	109%	50%	140%
Dibromochloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	119%	50%	140%	116%	60%	130%	123%	50%	140%
Ethylene Dibromide	1		< 0.04	< 0.04	0.0%	< 0.04	116%	50%	140%	100%	60%	130%	109%	50%	140%
Tetrachloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	86%	50%	140%	86%	60%	130%	114%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	NA	50%	140%	107%	60%	130%	129%	50%	140%
Chlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	84%	60%	130%	109%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	80%	50%	140%	77%	60%	130%	103%	50%	140%
m & p-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	91%	50%	140%	77%	60%	130%	104%	50%	140%
Bromoform	1		< 0.05	< 0.05	0.0%	< 0.05	121%	50%	140%	112%	60%	130%	127%	50%	140%
Styrene	1		< 0.05	< 0.05	0.0%	< 0.05	84%	50%	140%	81%	60%	130%	113%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	115%	60%	130%	122%	50%	140%
o-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	85%	50%	140%	69%	60%	130%	101%	50%	140%
1,3-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	99%	60%	130%	126%	50%	140%
1,4-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	113%	60%	130%	120%	50%	140%
1,2-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	122%	50%	140%	114%	60%	130%	116%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	114%	60%	130%	105%	50%	140%
1,3-Dichloropropene	1		< 0.04	< 0.04	0.0%	< 0.04	74%	50%	140%	90%	60%	130%	98%	50%	140%
n-Hexane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	73%	60%	130%	101%	50%	140%

Certified By: Jonby Takeuchi

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 12T675486**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 12T675486**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Aroclor 1242	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1248	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1254	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1260	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Polychlorinated Biphenyls	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Moisture Content		MOE E3139	BALANCE
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

Soil Engineers Ltd.
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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 ANALYSIS
(GROUNDWATER SAMPLES AND QA/QC SAMPLE)

REFERENCE NO. 1211-E073

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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T676437

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Analyst

WATER ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

DATE REPORTED: Jan 04, 2013

PAGES (INCLUDING COVER): 13

VERSION*: 3

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES
VERSION 3:
Reporting Samples MW4, MW5, MW6 & MW& compared to Table 2 (February 6th 2013)

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - OC Pesticides (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW4	MW5	MW6	MW7
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012	12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050993	4051006	4051021	4051036
Gamma-Hexachlorocyclohexane	µg/L		0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	1.5	0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	µg/L	0.35	0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	0.048	0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan	µg/L	1.5	0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	µg/L	7	0.04	<0.04	<0.04	<0.04	<0.04
DDE	µg/L		0.01	<0.01	<0.01	<0.01	<0.01
DDD	µg/L	10	0.05	<0.05	<0.05	<0.05	<0.05
DDT	µg/L		0.04	<0.04	<0.04	<0.04	<0.04
Dieldrin	µg/L	0.35	0.02	<0.02	<0.02	<0.02	<0.02
Endrin	µg/L	0.48	0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	µg/L	6.5	0.04	<0.04	<0.04	<0.04	<0.04
Hexachlorobenzene	ug/L	1	0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L	0.44	0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	ug/L	2.1	0.01	<0.01	<0.01	<0.01	<0.01
Surrogate	**Unit**	**Acceptable Limits**					
TCMX	%	50-140		118	118	73	72
Decachlorobiphenyl	%	60-140		90	110	70	77

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW) - Current

4050993-4051036 Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW4	MW5	MW6
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050993	4051006	4051021
F1 (C6 to C10)	µg/L		25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA	NA
Surrogate	**Unit**	**Acceptable Limits**				
Terphenyl	%	60-140		65	70	61

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW) - Current

4050993-4051021 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		Trip Blank
		SAMPLE TYPE:		Water
		DATE SAMPLED:		12/28/2012
Parameter	Unit	G / S	RDL	4051042
Benzene	µg/L	5.0	0.20	<0.20
Toluene	µg/L	24	0.20	<0.20
Ethylbenzene	µg/L	2.4	0.10	<0.10
Xylene Mixture	µg/L	300	0.20	<0.20
F1 (C6 to C10)	µg/L		25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		65

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW) - Current

4051042
The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
Total C6-C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

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AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW4	MW5	MW6
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050993	4051006	4051021
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20	<0.20
Benzene	µg/L	5.0	0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20	<0.20
Toluene	µg/L	24	0.20	<0.20	<0.20	<0.20
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	25	0.10	<0.10	<0.10	<0.10

Certified By:

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AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW4	MW5	MW6
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050993	4051006	4051021
Styrene	µg/L	5.4	0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	300	0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	50-140		108	115	116
4-Bromofluorobenzene	% Recovery	50-140		101	102	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW) - Current

Certified By:

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AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW4	MW5	MW6	MW7
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012	12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050993	4051006	4051021	4051036
Antimony	µg/L	6	0.5	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/L	25	1.0	<1.0	<1.0	<1.0	<1.0
Barium	µg/L	1000	2.0	62.3	71.6	115	146
Beryllium	µg/L	4.0	0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/L	5000	10.0	32.5	31.9	36.0	125
Cadmium	µg/L	2.7	0.2	0.4	<0.2	<0.2	<0.2
Chromium	µg/L	50	2.0	<2.0	<2.0	<2.0	2.1
Cobalt	µg/L	3.8	0.5	0.8	0.9	1.2	0.7
Copper	µg/L	87	1.0	3.1	1.3	<1.0	2.8
Lead	µg/L	10	0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	70	0.5	2.6	13.0	7.1	6.4
Nickel	µg/L	100	1.0	9.8	8.2	8.4	10.3
Selenium	µg/L	10	1.0	<1.0	<1.0	<1.0	<1.0
Silver	µg/L	1.5	0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	2	0.3	<0.3	<0.3	<0.3	<0.3
Uranium	µg/L	20	0.5	<0.5	0.7	<0.5	3.9
Vanadium	µg/L	6.2	0.4	<0.4	<0.4	<0.4	1.1
Zinc	µg/L	1100	5.0	20.9	12.2	5.1	<5.0
Mercury	µg/L	0.29	0.02	<0.02	<0.02	<0.02	<0.02
Chromium VI	µg/L	25	5	<5	<5	<5	<5
Cyanide	µg/L	66	2	<2	<2	<2	<2
Sodium	µg/L	490000	500	7630	9090	12100	14400
Chloride	µg/L	790000	100	11700	9830	9760	33000
Nitrate as N	µg/L		50	77	1180	2320	3550
Nitrite as N	µg/L		50	<50	405	285	<50
Electrical Conductivity	uS/cm		2	777	610	739	928
pH	pH Units		NA	7.36	7.63	7.51	7.72

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW) - Current

Certified By: Elizabeth Rolakowska

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED | **AGAT WORK ORDER: 12T676437**

PROJECT NO: 1211-E073 | **ATTENTION TO: Andrejs Jansons**

Trace Organics Analysis

RPT Date: Jan 04, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	1		< 0.20	< 0.20	0.0%	< 0.20	108%	50%	140%	93%	50%	140%	68%	50%	140%
Vinyl Chloride	1		< 0.17	< 0.17	0.0%	< 0.17	122%	50%	140%	75%	50%	140%	73%	50%	140%
Bromomethane	1		< 0.20	< 0.20	0.0%	< 0.20	117%	50%	140%	100%	50%	140%	112%	50%	140%
Trichlorofluoromethane	1		< 0.40	< 0.40	0.0%	< 0.40	116%	50%	140%	107%	50%	140%	91%	50%	140%
Acetone	1		< 1.0	< 1.0	0.0%	< 1.0	126%	50%	140%	128%	50%	140%	122%	50%	140%
1,1-Dichloroethylene	1		< 0.30	< 0.30	0.0%	< 0.30	124%	50%	140%	127%	60%	130%	126%	50%	140%
Methylene Chloride	1		< 0.30	< 0.30	0.0%	< 0.30	120%	50%	140%	124%	60%	130%	123%	50%	140%
trans- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	122%	50%	140%	119%	60%	130%	127%	50%	140%
Methyl tert-butyl ether	1		< 0.20	< 0.20	0.0%	< 0.20	88%	50%	140%	112%	60%	130%	103%	50%	140%
1,1-Dichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	126%	50%	140%	129%	60%	130%	130%	50%	140%
Methyl Ethyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	119%	50%	140%	112%	50%	140%	124%	50%	140%
cis- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	100%	50%	140%	112%	60%	130%	130%	50%	140%
Chloroform	1		< 0.20	< 0.20	0.0%	< 0.20	127%	50%	140%	122%	60%	130%	125%	50%	140%
1,2-Dichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	127%	50%	140%	121%	60%	130%	113%	50%	140%
1,1,1-Trichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	124%	50%	140%	91%	60%	130%	123%	50%	140%
Carbon Tetrachloride	1		< 0.20	< 0.20	0.0%	< 0.20	113%	50%	140%	126%	60%	130%	122%	50%	140%
Benzene	1		< 0.20	< 0.20	0.0%	< 0.20	99%	50%	140%	111%	60%	130%	114%	50%	140%
1,2-Dichloropropane	1		< 0.20	< 0.20	0.0%	< 0.20	117%	50%	140%	112%	60%	130%	120%	50%	140%
Trichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	119%	60%	130%	120%	50%	140%
Bromodichloromethane	1		< 0.20	< 0.20	0.0%	< 0.20	130%	50%	140%	116%	60%	130%	128%	50%	140%
Methyl Isobutyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	97%	50%	140%	93%	50%	140%	83%	50%	140%
1,1,2-Trichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	116%	60%	130%	115%	50%	140%
Toluene	1		< 0.20	< 0.20	0.0%	< 0.20	94%	50%	140%	83%	60%	130%	84%	50%	140%
Dibromochloromethane	1		< 0.10	< 0.10	0.0%	< 0.10	125%	50%	140%	127%	60%	130%	128%	50%	140%
Ethylene Dibromide	1		< 0.10	< 0.10	0.0%	< 0.10	123%	50%	140%	109%	60%	130%	112%	50%	140%
Tetrachloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	86%	50%	140%	79%	60%	130%	82%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	115%	60%	130%	121%	50%	140%
Chlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	85%	50%	140%	81%	60%	130%	77%	50%	140%
Ethylbenzene	1		< 0.10	< 0.10	0.0%	< 0.10	83%	50%	140%	79%	60%	130%	130%	50%	140%
m & p-Xylene	1		< 0.20	< 0.20	0.0%	< 0.20	87%	50%	140%	79%	60%	130%	78%	50%	140%
Bromoform	1		< 0.10	< 0.10	0.0%	< 0.10	122%	50%	140%	119%	60%	130%	130%	50%	140%
Styrene	1		< 0.10	< 0.10	0.0%	< 0.10	90%	50%	140%	86%	60%	130%	78%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	129%	60%	130%	126%	50%	140%
o-Xylene	1		< 0.10	< 0.10	0.0%	< 0.10	89%	50%	140%	80%	60%	130%	81%	50%	140%
1,3-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	111%	50%	140%	98%	60%	130%	97%	50%	140%
1,4-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	121%	50%	140%	106%	60%	130%	101%	50%	140%
1,2-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	125%	50%	140%	122%	60%	130%	111%	50%	140%
1,3-Dichloropropene	1		< 0.30	< 0.30	0.0%	< 0.30	89%	50%	140%	102%	60%	130%	104%	50%	140%
Xylene Mixture	1		< 0.20	< 0.20	0.0%	< 0.20	88%	50%	140%	80%	60%	130%	80%	50%	140%

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis (Continued)

RPT Date: Jan 04, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
n-Hexane	1		< 0.20	< 0.20	0.0%	< 0.20	NA	50%	140%	91%	60%	130%	84%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 to C10)	1		< 25	< 25	0.0%	< 25	94%	60%	140%	88%	60%	140%	96%	60%	140%
F2 (C10 to C16)	1	4051006	< 100	< 100	0.0%	< 100	103%	60%	140%	96%	60%	140%	60%	60%	140%
F3 (C16 to C34)	1	4051006	< 100	< 100	0.0%	< 100	103%	60%	140%	101%	60%	140%	77%	60%	140%
F4 (C34 to C50)	1	4051006	< 100	< 100	0.0%	< 100	80%	60%	140%	80%	60%	140%	100%	60%	140%
O. Reg. 153(511) - OC Pesticides (Water)															
Gamma-Hexachlorocyclohexane	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	74%	50%	140%	75%	50%	140%
Heptachlor	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	94%	50%	140%	85%	50%	140%	88%	50%	140%
Aldrin	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	95%	50%	140%	70%	50%	140%	77%	50%	140%
Heptachlor Epoxide	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	71%	50%	140%	77%	50%	140%
Endosulfan	1	4051021	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	80%	50%	140%	75%	50%	140%
Chlordane	1	4051021	< 0.04	< 0.04	0.0%	< 0.04	97%	50%	140%	72%	50%	140%	75%	50%	140%
DDE	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	73%	50%	140%	75%	50%	140%
DDD	1	4051021	< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	75%	50%	140%	80%	50%	140%
DDT	1	4051021	< 0.04	< 0.04	0.0%	< 0.04	97%	50%	140%	68%	50%	140%	75%	50%	140%
Dieldrin	1	4051021	< 0.02	< 0.02	0.0%	< 0.02	99%	50%	140%	80%	50%	140%	85%	50%	140%
Endrin	1	4051021	< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	85%	50%	140%	81%	50%	140%
Methoxychlor	1	4051021	< 0.04	< 0.04	0.0%	< 0.04	93%	50%	140%	73%	50%	140%	80%	50%	140%
Hexachlorobenzene	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	105%	50%	140%	77%	50%	140%	74%	50%	140%
Hexachlorobutadiene	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	103%	50%	140%	102%	50%	140%	87%	50%	140%
Hexachloroethane	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	93%	50%	140%	80%	50%	140%	75%	50%	140%

Certified By:

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Water Analysis

RPT Date: Jan 04, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	1	4050980	< 0.5	< 0.5	0.0%	< 0.5	102%	70%	130%	97%	80%	120%	103%	70%	130%
Arsenic	1	4050980	< 1.0	1.0	NA	< 1.0	99%	70%	130%	100%	80%	120%	110%	70%	130%
Barium	1	4050980	108	105	2.8%	< 2.0	99%	70%	130%	96%	80%	120%	105%	70%	130%
Beryllium	1	4050980	< 0.5	< 0.5	0.0%	< 0.5	101%	70%	130%	96%	80%	120%	103%	70%	130%
Boron	1	4050980	104	111	6.5%	< 10.0	100%	70%	130%	95%	80%	120%	100%	70%	130%
Cadmium	1	4050980	0.2	0.3	NA	< 0.2	97%	70%	130%	98%	80%	120%	118%	70%	130%
Chromium	1	4050980	5.0	4.4	12.8%	< 2.0	102%	70%	130%	102%	80%	120%	89%	70%	130%
Cobalt	1	4050980	1.3	1.3	0.0%	< 0.5	105%	70%	130%	104%	80%	120%	100%	70%	130%
Copper	1	4050980	1.6	1.9	17.1%	< 1.0	93%	70%	130%	94%	80%	120%	90%	70%	130%
Lead	1	4050980	< 0.5	< 0.5	0.0%	< 0.5	101%	70%	130%	107%	80%	120%	98%	70%	130%
Molybdenum	1	4050980	29.7	29.9	0.7%	< 0.5	98%	70%	130%	92%	80%	120%	101%	70%	130%
Nickel	1	4050980	8.4	8.4	0.0%	< 1.0	103%	70%	130%	105%	80%	120%	99%	70%	130%
Selenium	1	4050980	2.8	2.9	3.5%	< 1.0	98%	70%	130%	100%	80%	120%	108%	70%	130%
Silver	1	4050980	0.4	0.3	NA	< 0.2	101%	70%	130%	117%	80%	120%	112%	70%	130%
Thallium	1	4050980	< 0.3	< 0.3	0.0%	< 0.3	104%	70%	130%	110%	80%	120%	100%	70%	130%
Uranium	1	4050980	2.2	2.2	0.0%	< 0.5	101%	70%	130%	101%	80%	120%	98%	70%	130%
Vanadium	1	4050980	1.4	1.7	19.4%	< 0.4	100%	70%	130%	99%	80%	120%	100%	70%	130%
Zinc	1	4050980	10.3	10.1	2.0%	< 5.0	98%	70%	130%	101%	80%	120%	108%	70%	130%
Mercury	1	4050980	<0.02	<0.02	0.0%	< 0.02	97%	70%	130%	93%	80%	120%	99%	70%	130%
Chromium VI	1		< 5	< 5	0.0%	< 5	101%	70%	130%	106%	80%	120%	103%	70%	130%
Cyanide	1	4050980	< 2	< 2	0.0%	< 2	98%	70%	130%	97%	80%	120%	81%	70%	130%
Sodium	1	4051021	12100	11900	1.7%	< 500	100%	70%	130%	99%	80%	120%	97%	70%	130%
Chloride	1	4051036	31700	32300	1.9%	< 100	94%	70%	130%	98%	70%	130%	102%	70%	130%
Nitrate as N	1	4051036	3390	3280	3.3%	< 50	92%	70%	130%	106%	70%	130%	109%	70%	130%
Nitrite as N	1	4051036	< 50	< 50	0.0%	< 50	NA	70%	130%	108%	70%	130%	117%	70%	130%
Electrical Conductivity	1	4050980	1370	1370	0.0%	< 2	105%	90%	110%	NA			NA		
pH	1	4050980	7.58	7.68	1.3%	NA	100%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.
RPD Qualifier (As, Cd, Ag): As the average value for the sample and a duplicate is less than 5X RDL, lab's RPD acceptance criteria is not applicable.

Certified By: Elizabeth Rolokowska

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED | **AGAT WORK ORDER: 12T676437**

PROJECT NO: 1211-E073 | **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Aldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endosulfan	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Chlordane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDE	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDD	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDT	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Dieldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Methoxychlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachloroethane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Benzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Toluene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Ethylbenzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Xylene Mixture	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10)	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 12T676437**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 12T676437**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

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CLIENT NAME: SOIL ENGINEERS LIMITED
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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T676437

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Analyst

WATER ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

DATE REPORTED: Jan 04, 2013

PAGES (INCLUDING COVER): 26

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES
VERSION 2:
Reporting Samples MW2 & MW3 compared to Table 8 (February 6th 2013)

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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CLIENT NAME: SOIL ENGINEERS LIMITED
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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 13T678508

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Jan 16, 2013

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 13T678508

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2013-01-10 **DATE REPORTED: 2013-01-16**

		SAMPLE DESCRIPTION:		MW7	Dup3
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		1/10/2013	1/10/2013
Parameter	Unit	G / S	RDL	4061767	4061772
Benzene	µg/L	5.0	0.20	<0.20	<0.20
Toluene	µg/L	24	0.20	<0.20	<0.20
Ethylbenzene	µg/L	2.4	0.10	<0.10	<0.10
Xylene Mixture	µg/L	300	0.20	<0.20	<0.20
F1 (C6 to C10)	µg/L		25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		77	114

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW) - Current

4061767-4061772 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
Total C6-C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 13T678508

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2013-01-10

DATE REPORTED: 2013-01-16

		SAMPLE DESCRIPTION:		MW5	Dup4	TripBlank
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		1/10/2013	1/10/2013	10/1/2012
Parameter	Unit	G / S	RDL	4061769	4061776	4061779
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20	<0.20
Benzene	µg/L	5.0	0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20	<0.20
Toluene	µg/L	24	0.20	<0.20	<0.20	<0.20
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	25	0.10	<0.10	<0.10	<0.10

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Certificate of Analysis

AGAT WORK ORDER: 13T678508

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2013-01-10

DATE REPORTED: 2013-01-16

		SAMPLE DESCRIPTION:		MW5	Dup4	TripBlank
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		1/10/2013	1/10/2013	10/1/2012
Parameter	Unit	G / S	RDL	4061769	4061776	4061779
Styrene	µg/L	5.4	0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	300	0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	50-140		108	112	103
4-Bromofluorobenzene	% Recovery	50-140		93	88	93

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW) - Current

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 13T678508

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis

RPT Date: Jan 16, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Water)															
Benzene	1		< 0.20	< 0.20	0.0%	< 0.20	118%	50%	140%	99%	60%	130%	91%	50%	140%
Toluene	1		< 0.20	< 0.20	0.0%	< 0.20	102%	50%	140%	85%	60%	130%	81%	50%	140%
Ethylbenzene	1		< 0.10	< 0.10	0.0%	< 0.10	100%	50%	140%	87%	60%	130%	81%	50%	140%
Xylene Mixture	1		< 0.20	< 0.20	0.0%	< 0.20	93%	50%	140%	96%	60%	130%	90%	50%	140%
F1 (C6 to C10)	1		< 25	< 25	0.0%	< 25	102%	60%	140%	91%	60%	140%	82%	60%	140%
F2 (C10 to C16)	1		< 100	< 100	0.0%	< 100	98%	60%	140%	69%	60%	140%	82%	60%	140%
F3 (C16 to C34)	1		< 100	< 100	0.0%	< 100	97%	60%	140%	101%	60%	140%	96%	60%	140%
F4 (C34 to C50)	1		< 100	< 100	0.0%	< 100	80%	60%	140%	89%	60%	140%	92%	60%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	1		< 0.20	< 0.20	0.0%	< 0.20	111%	50%	140%	115%	50%	140%	80%	50%	140%
Vinyl Chloride	1		< 0.17	< 0.17	0.0%	< 0.17	122%	50%	140%	70%	50%	140%	81%	50%	140%
Bromomethane	1		< 0.20	< 0.20	0.0%	< 0.20	111%	50%	140%	101%	50%	140%	110%	50%	140%
Trichlorofluoromethane	1		< 0.40	< 0.40	0.0%	< 0.40	112%	50%	140%	89%	50%	140%	71%	50%	140%
Acetone	1		< 1.0	< 1.0	0.0%	< 1.0	124%	50%	140%	112%	50%	140%	82%	50%	140%
1,1-Dichloroethylene	1		< 0.30	< 0.30	0.0%	< 0.30	119%	50%	140%	97%	60%	130%	70%	50%	140%
Methylene Chloride	1		< 0.30	< 0.30	0.0%	< 0.30	115%	50%	140%	112%	60%	130%	99%	50%	140%
trans- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	119%	60%	130%	77%	50%	140%
Methyl tert-butyl ether	1		< 0.20	< 0.20	0.0%	< 0.20	126%	50%	140%	123%	60%	130%	86%	50%	140%
1,1-Dichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	123%	50%	140%	119%	60%	130%	86%	50%	140%
Methyl Ethyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	119%	50%	140%	91%	50%	140%	93%	50%	140%
cis- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	120%	50%	140%	111%	60%	130%	74%	50%	140%
Chloroform	1		< 0.20	< 0.20	0.0%	< 0.20	128%	50%	140%	128%	60%	130%	91%	50%	140%
1,2-Dichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	119%	50%	140%	121%	60%	130%	78%	50%	140%
1,1,1-Trichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	125%	50%	140%	128%	60%	130%	85%	50%	140%
Carbon Tetrachloride	1		< 0.20	< 0.20	0.0%	< 0.20	122%	50%	140%	123%	60%	130%	92%	50%	140%
Benzene	1		< 0.20	< 0.20	0.0%	< 0.20	116%	50%	140%	102%	60%	130%	69%	50%	140%
1,2-Dichloropropane	1		< 0.20	< 0.20	0.0%	< 0.20	116%	50%	140%	103%	60%	130%	74%	50%	140%
Trichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	124%	50%	140%	121%	60%	130%	80%	50%	140%
Bromodichloromethane	1		< 0.20	< 0.20	0.0%	< 0.20	123%	50%	140%	118%	60%	130%	83%	50%	140%
Methyl Isobutyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	77%	50%	140%	73%	50%	140%	91%	50%	140%
1,1,2-Trichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	118%	50%	140%	107%	60%	130%	75%	50%	140%
Toluene	1		< 0.20	< 0.20	0.0%	< 0.20	104%	50%	140%	91%	60%	130%	68%	50%	140%
Dibromochloromethane	1		< 0.10	< 0.10	0.0%	< 0.10	126%	50%	140%	117%	60%	130%	82%	50%	140%
Ethylene Dibromide	1		< 0.10	< 0.10	0.0%	< 0.10	100%	50%	140%	101%	60%	130%	69%	50%	140%
Tetrachloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	97%	50%	140%	109%	60%	130%	78%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	113%	60%	130%	79%	50%	140%
Chlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	102%	50%	140%	97%	60%	130%	68%	50%	140%
Ethylbenzene	1		< 0.10	< 0.10	0.0%	< 0.10	85%	50%	140%	83%	60%	130%	103%	50%	140%

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 13T678508

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis (Continued)

RPT Date: Jan 16, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
m & p-Xylene	1		< 0.20	< 0.20	0.0%	< 0.20	90%	50%	140%	83%	60%	130%	67%	50%	140%
Bromoform	1		< 0.10	< 0.10	0.0%	< 0.10	103%	50%	140%	111%	60%	130%	70%	50%	140%
Styrene	1		< 0.10	< 0.10	0.0%	< 0.10	80%	50%	140%	90%	60%	130%	71%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	85%	60%	130%	98%	50%	140%
o-Xylene	1		< 0.10	< 0.10	0.0%	< 0.10	84%	50%	140%	77%	60%	130%	66%	50%	140%
1,3-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	81%	50%	140%	73%	60%	130%	71%	50%	140%
1,4-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	83%	50%	140%	79%	60%	130%	72%	50%	140%
1,2-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	85%	50%	140%	79%	60%	130%	63%	50%	140%
1,3-Dichloropropene	1		< 0.30	< 0.30	0.0%	< 0.30	80%	50%	140%	79%	60%	130%	95%	50%	140%
Xylene Mixture	1		< 0.20	< 0.20	0.0%	< 0.20	87%	50%	140%	80%	60%	130%	67%	50%	140%
n-Hexane	1		< 0.20	< 0.20	0.0%	< 0.20	NA	50%	140%	79%	60%	130%	81%	50%	140%

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 13T678508**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Toluene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Ethylbenzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Xylene Mixture	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10)	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 13T678508**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

Soil Engineers Ltd.
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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

A REPORT TO
BRONTE GREEN CORPORATION

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PROPOSED RESIDENTIAL DEVELOPMENT

CREEK AREA

1401 BRONTE ROAD
TOWN OF OAKVILLE

Reference No. 1211-E073

January 31, 2014

DISTRIBUTION

3 Copies - David Schaeffer Engineering Ltd.

LIMITATIONS OF LIABILITY

This report was prepared by Soil Engineers Ltd. for the account of Bronte Green Corporation and for review by its designated agents, financial institutions and government agencies. The material in it reflects the judgement of Andrejs Jansons, B.Eng., E.I.T., and Ian Chiu, P.Eng., in light of the information available at the time of preparation. Any use which a Third Party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. Soil Engineers Ltd. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

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 analyze representative soil samples for a Phase Two Environmental Assessment only. No other warranty or representation, expressed or implied, as to the accuracy of the information is 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. Please note that subsurface conditions may vary between sampling locations.

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

TABLE OF CONTENTS

TABLES

ENCLOSURES

1.0 EXECUTIVE SUMMARY

Soil Engineers Ltd. was retained by Bronte Green Corporation to conduct a Phase Two Environmental Site Assessment at 1401 Bronte Road, in the Town of Oakville.

The purpose of the investigation is to establish a chemical profile of the current soil and groundwater conditions further the findings of our Phase One assessment.

The subject site is part of a golf course, and is irregularly shaped. Bronte Road extends along the west limit. A hydro corridor separates the west and east part of the site. Fourteen Mile Creek extends along the east/northeast limit and traverses the north part of the site near Upper Middle Road. The surrounding areas consist of residential properties and wooded land to the west, the Halton Region office to the south, Deerfield golf course to the south/southeast, wooded land to the north/northeast and residential development to the north. It is noted that this report pertains specifically to the northern strip of the site, that is, the area within 30 m of Fourteen Mile Creek, extending to Upper Middle Road. (The assessment for the remainder of the site has been presented under separate cover.) Soil and groundwater samples were retrieved at selected locations and submitted for laboratory analyses. A review of the results for the soil and groundwater indicates that the concentrations of the tested parameters are below the reportable detection limit or within the Table 8 potable groundwater site condition standards for all non-agricultural property uses.

Based on the findings of our Phase One and Phase Two assessments, we consider the site to be suitable for the proposed residential development.

2.0 INTRODUCTION

Soil Engineers Ltd. has conducted a Phase Two Environmental Site Assessment (ESA) as defined by Ontario Regulation (O. Reg.) 153/04, as amended by O. Regs. 366/05, 66/08, 511/09, 245/10, 179/11 and 269/11, herein referred to as O. Reg. 153/04, at1401 Bronte Road, in the Town of Oakville. The location of the site is shown on Drawing No. 1

The scope of work of this Phase Two ESA was developed based on the findings of our Phase One ESA, Report Reference No. 1211-E073, dated January 4, 2013. Environmental concerns related to the materials used for construction are typically dealt with through the Occupational Health and Safety Act, and are not addressed as part of this assessment.

The objectives, methodology, analysis and conclusions of the Phase Two ESA are presented within.

2.1 Site Description

The subject site is located on the east side of Bronte Road, north of Highway 403. Fourteen Mile Creek extends along the east/northeast limit of the subject site. A hydro corridor separates the west and east parts of the site. The descriptions from the parcel registries for each parcel that contains portion of the site are given below:

PIN	Description From Parcel Register
25069 - 159 (LT)	PT LT 30, CON 2 TRAF SDS, PTS 1&4, 20R6034 S&E PTS 1&2 20R12769 & PT LT 30 CON 2 TRAF SDS, PT1 20R12768 S&E PT 1 20R15746. S/T 74286. S/T EASE H840899 OVER PTS 12&16 20R13352. S/T EASE HR70019 OVER PT 1 20R13608; TOWN OF OAKVILLE;
25069 - 100 (LT)	PT LTS 28&29, CON 2 SDS, PT 11 20R6034 & PTS 1-2 20R12767; OAKVILLE. S/E EASE 840899 OVER PT 21 20R13352. S/T EASE HR70019 OVER PTS 3-4 20R13608

The site is irregular in shape and encompasses an approximate area of 13.67 ha (33.76 ac). The UTM coordinates for the approximate centroid of the subject site are 17T 600930 m East and 4808360 m North, as obtained from Google Earth which utilizes a 1983 North American Datum.

2.2 Property Ownership

This Phase Two ESA was commissioned to address the environmental liability in association with the proposed residential development in accordance with our proposal dated November 8, 2012, as authorized on December 11, 2012, by Mr. Michael Telawski of Bronte Green Corporation.

Our client and the owner of the subject site can be contacted at:

Bronte Green Corporation
2123 Turnberry Road
Burlington, ON
L7M 4P8

Attention: Mr. Gordon Buck

2.3 Current and Proposed Future Uses

The subject site consists of a commercial golf course (Saw Whet Golf Course) which encompasses the clubhouse, maintenance buildings and office.

A residential development is proposed for the subject site.

2.4 Application of Standards

Residential development is being proposed for the subject site. This assessment pertains to the north part of the site, that is, the areas adjacent to Fourteen Mile Creek. With bedrock in the area at a depth of approximately 8 m below the ground surface, the site is not considered a shallow soil property. The pH level is within the range proscribed by O. Reg. 153/04. The site condition standards used for this assessment are 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 Proprty Uses, for coarse-textured soils from the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (EPA)", April 15, 2011.

3.0 BACKGROUND

3.1 Physical Setting

The subject site is located in the Town of Oakville, within the physiographical region known as the Iroquois Lake Plain. Fourteen Mile Creek extends along the east/northeast limit and traverses the north part of the site. A review of a Topographic Map, presented on Drawing No. 2, shows that precipitation runoff drains in an easterly direction towards Fourteen Mile Creek and subsequently into Lake Ontario.

The site is located within the Bronte Creek Watershed. It does not lie within a wellhead protection area. The bedrock in the area lies at a depth of approximately 8 mbgs, and the overburden soils consist of silty sand, silt and silty clay with a trace of gravel.

3.2 Past Investigations

Soil Engineers Ltd. conducted a Phase One ESA for the subject site, and the findings have been presented under separate cover, Report Reference No. 1211-E073, dated January 4, 2013. The assessment included a review of a Phase One Assessment report prepared by Soil Probe Ltd. (Report No. 2012-3820R, dated April 26, 2012).

Our Phase One ESA revealed the following items of environmental concern associated with the subject site.

- Possible pesticide use as part of past farming activities and golf course maintenance.
- An electrical transformer station is located along the north limit, adjacent to Upper Middle Road West.
- Above Ground Storage Tanks (ASTs) are located within the subject site.
- Fill material of unknown environmental quality is present on the subject site.

Accordingly, a Phase Two ESA was recommended to address the soil and groundwater conditions at the subject site pertaining to the above-mentioned environmental concerns.

A Phase One Conceptual Site Plans is shown on Drawing No. 3.

4.0 SCOPE OF INVESTIGATION

4.1 Overview of Site Investigation

The purpose of this investigation is to verify the chemical characteristics of the soil and groundwater at the subject property.

This assessment consisted of digging test pits, drilling boreholes and installing monitoring wells at selected locations on the subject site to retrieve soil and groundwater samples for laboratory analysis.

The rationale behind the selection of the borehole and test pit locations is detailed in Tables 1 and 2.

Table 1 - Rationale for Borehole Sampling Locations

Borehole No.	Monitoring Well No.	Location	Rational	Tests Conducted
1	-	25 m south of electrical transformer	Assess soil and groundwater with consideration to the electrical transformer and on-site fill material	M&I and PCBs
2	MW2	3 m east of gasoline fuel tank	Assess soil and groundwater with consideration to on-site waste generator, ASTs and fill material	M&I and CCME F1-F4
3	MW3	25 m east of gasoline fuel tank and 4 m east of golf cart storage shed		M&I and CCME F1-F4
101	MW101	75 m east of gasoline fuel tank and adjacent to the hydro corridor intersecting the subject site and area of pesticide use along 30 m boundary from Fourteen Mile Creek	Assess soil and groundwater with consideration to on-site waste genrator, ASTs, fill and pesticide use	M&I, CCME F1-F4, VOCs and OCPs

Table 2 - Rationale for Test Pit Sampling Locations

Test Pit No.	Location	Rationale	Tests Conducted
1	1 m west of No. 18 green	To assess the soil and groundwater with consideration to on-site pesticide use and fill material	M&I and OCP
4	1 m south of No. 4 green		M&I and OCP
5	1 m east of No. 7 green		M&I and OCP

4.2 Media Investigated

Given the potential contaminant types, and the physiological characteristics of the subject site, the soil and groundwater could have been affected. Therefore, the field work consisted of intrusive soil sampling techniques and the installation of monitoring wells for water sampling, generally downstream from the potential contaminant sources.

4.3 Phase One Conceptual Site Plan

The Phase One Conceptual Site Plan provided in the Phase One ESA report indicates the locations of the Potentially Contaminating Activities that could result in adverse environmental impacts on the soil and groundwater conditions at the subject site, as shown on Drawing No. 3.

4.4 Deviations

There is no deviation from the sampling and analysis plan based on our recommendations given in the Phase One ESA prepared by Soil Engineers Ltd. Therefore, the Phase Two ESA satisfies all the conditions set forth in the Phase One ESA.

5.0 INVESTIGATION METHOD

5.1 General

This Phase Two assessment utilized four boreholes to depths ranging from 4.9 m to 7.8 mbgs, and three test pits to a depth of 0.5 m. Monitoring wells were installed in three of the boreholes. The locations of the boreholes monitoring wells and test pits are shown on Drawing No. 4. The boreholes and test pits were checked for the presence of fill material.

The sampling procedures, laboratory analytical methods, protocols and 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 (MOE Guidance Manual) and O. Reg 153/04.

The soil and groundwater samples were sent to AGAT Laboratories, accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA), for chemical analyses under the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA).

5.2 Drilling and Test Pitting

Prior to carrying out the field work, the underground utility services were located and marked out in the field by G-Tel, Hydro One, Weir Environmental Ltd, PVS Contractors, Enbridge, Bethlehem Trenching, Halton Region and Sonic Soil Sampling Inc.

The field work was performed on December 18 and 19, 2012, and January 7, 2014.

The boreholes drilled on December 18 and 19, 2012, were advanced to soil sampling depths by a Geoprobe 7820 drilling system equipped for soil sampling. The equipment was provided and operated by Strata Soil Sampling Inc. Soil samples were recovered from the boreholes using Shelby tubes for soil classification, visual and olfactory observations and field vapour readings. The borehole drilled on January 7, 2014 was advanced to soil sampling depths by a Pionjar 120 drilling system equipped for soil sampling. The equipment was provided and operated by Sonic Soil Sampling Inc. Soil samples were recovered from the borehole using split spoons for soil classification, visual and olfactory observations and field vapour readings. The drilling work was monitored by a SEL representative who recorded the findings and observations. The test pits were hand dug on December 18, 2012, by a SEL representative to a depth of 0.5 m. The borehole and test pit logs are presented on Figure Nos. 1 to 7.

5.3 **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 soil classification. Samples submitted for CCME Petroleum Hydrocarbon (PHC) Fraction F1 and Volatile Organic Compounds (VOC) analyses were collected using a Terracore (TM) sampler and placed into methanol charged vials. An additional soil sample in 200 mL jar was utilized for analysis of PHC Fractions F2 – F4 and soil moisture.

Based on visual and olfactory observations and field vapour readings, representative soil samples from each borehole were selected and sent to laboratory.

5.4 Groundwater Monitoring and Sampling

Once the final soil samples had been retrieved, monitoring wells were installed in Boreholes 1 to 3 by Strata Soil Sampling Inc. and Borehole 101 by Sonic Soil Sampling Inc. 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 0.3 mbgs.

A flushmount casing, cemented in place, was installed at the surface of MW2 to MW3, and a monument casing was installed at the surface of MW101. After the monitoring well installation, the wells were purged by removing a minimum of three (3) well casing volumes of groundwater to allow for the influx of fresh formation water.

After the purging of the monitoring wells on December 19, 2012 and January 9, 2014, sufficient lengths of low-density polyethylene tubing were used to sample water directly into laboratory supplied sample containers prepared with preservative for the analysis being conducted.

Groundwater monitoring was conducted at the site on December 28, 2012, January 10, 2013 and January 10, 2014, to determine qualitative and quantitative properties of the groundwater at the site. The groundwater level and temperature were measured and each well was purged of approximately 10 L (3.9 gallons) of water to ensure potential contamination from drilling was flushed out of the system.

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

6.0 REVIEW AND EVALUATION

Detailed descriptions of the encountered subsurface conditions are presented on the Borehole and Test Pit Logs, Figure Nos. 1 to 7.

The borehole findings have disclosed that beneath a layer of topsoil, the site is predominantly underlain by sandy silt fill, silty sand till and sandy silt till.

6.1 Groundwater: Physical Characteristics and Flow Direction

The groundwater levels and physical characteristics of the groundwater on the day of sampling are tabulated in Table 3.

Table 3 - Groundwater Levels and Physical Characteristics of Groundwater

Monitoring Well No.	Water Level		Temperature (°C)	Odour	Colour	LNAPL
	Depth (m)	Elevation (m)				
2	4.40	128.3	5.6	None	Opaque (light brown)	None
3	4.70	128.1	5.8	None	Clear	None
101	5.6	127.8	6.0	None	Clear	None

LNAPL – Light Non-Aqueous Phase Liquid

Based on the topography of the subject site and the calculated groundwater elevations, localized groundwater flow at this area of the site is to the east/northeast, toward Fourteen Mile Creek. A Topographic Map is presented on Drawing No. 2.

6.2 Soil Field Screening and Soil Quality

Based on visual and olfactory observations and field vapour readings, representative soil samples from each borehole were selected and sent to the laboratory for chemical analysis. A summary of the soil testing program is given in Table 4.

Table 4 - Soil Testing Program

Borehole No.	Sample ID	Lab ID	Sampling Interval Depth (m)	Soil Type	Test Conducted
BH-1	BH1/1	4045838	0.3 – 0.8	Sandy Silt Fill	PCB
	BH1/2	4045839	0.9 – 1.4		M&I
BH-2	BH2/3	4045840	2.3 – 2.9	Silty Sand Fill	M&I
	BH2/4	4045841	3.0 – 3.7		PHC
BH-3	BH3/3	4045843	2.3 – 3.0		M&I
	BH3/6	4045844	4.6 – 5.5	Sandy Silt Till	PHC
BH-101	BH101/1	5085311	0.3 – 0.8	Silty Clay Fill	M&I
	BH101/1	5092746	0.3 – 0.8		OCP
	BH101/6	5085312	4.5 – 5.3	Silty Clay	PHC & VOC
TP-1	TP1	4045826	0.5	Sandy Silt Fill	M&I and OCP
TP-4	TP4	4045831	0.5		M&I and OCP
TP-5	TP5	4045833	0.5		M&I and OCP

Copies of the Certificates of Analysis for the soil samples are presented in Appendix 'B'.

A review of the results indicates that the tested parameters are below the reportable detection limit or within the Table 8 Standards.

6.3 Groundwater Quality

The wells were purged of water to ensure that no sediment or debris from the drilling was present in the sampled water. Groundwater samples were obtained from the monitoring wells by our representative on December 28, 2012, January 10, 2013, and January 10, 2014.

A summary of the groundwater testing program is given in Table 5.

Table 5 - Groundwater Testing Program

MW No.	Sample ID	Lab ID	Test Conducted
2	MW2	4050980	M&I, VOC and PHC
3	MW3	4050981	M&I , VOC and PHC
101	MW101	5088193	M&I, VOC and PHC

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

A review of the results for the groundwater indicates that the tested parameters are below the reportable detection limits or within the Table 8 Standards.

6.4 QA/QC Results

(i) Soil

A field duplicate for a selected soil sample was submitted for analyses for VOC. The QA/QC soil testing program is detailed in Table 6.

Table 6 – QA/QC Soil Testing Program

Original Sample ID	Sample ID	Lab ID	Depth (mbgs)	Soil Type	Test Conducted
TP5	Dup 2	4045842	0.5	Silty Clay	M&I
BH101/6	Dup10	5092747	4.5 – 5.3	Silty Clay Fill	VOC

The Certificates of Analysis for the QA/QC soil samples are included in Appendix 'B'.

The analytical results for the duplicate samples are similar to the resutls for the original samples.

(ii) **Groundwater**

A field duplicate for a selected groundwater sample was submitted for analysis for VOC. The QA/QC testing groundwater testing program is detailed in Table 7.

Table 7 - QA/QC Groundwater Testing Program

MW No.	Sample ID	Lab ID	Test Conducted
MW101	Dup	5088202	VOC

The Certificate of Analysis for the QA/QC groundwater sample is included in Appendix 'C'.

The analytical results for the duplicate groundwater sample are similar to the reuslts for the orignal sample.

6.5 Phase Two Conceptual Site Plan

The soil and groundwater at the site was found to meet the Table 8 site condition standards.

The Phase Two Conceptual Site Plan is presented on Drawing No. 5.

7.0 SUMMARY

This Phase Two assessment was conducted for the north area of the subject site along Fourteen Mile Creek. The results of the laboratory analysis indicate that the soil and groundwater meet the Table 8 potable groundwater site condition standards for all non-agricultural property uses.

Based on our previous Phase One ESA and this Phase Two ESA, there are no items of environmental concern pertaining to the subject site at this time. As such, we consider the site to be suitable for the proposed residential development.

SOIL ENGINEERS LTD.

Andrejs Jansons, B.Eng.,EIT

Ian Chiu, P.Eng., QP_{ESA}

AJ/VK/IC:hs

8.0 QUALIFICATIONS

Soil Engineers Ltd., formerly known as Soil-Eng Limited (founded in 1976), offers to its clients a range of specialized engineering services. Our company is staffed with both engineers and scientists who draw upon their combined experience to provide a team approach to problem solving. Specifically, our environmental division employs more than 10 people who are trained to understand the Ontario Ministry of the Environment regulations. We play an integral role in the development of industrial, commercial, institutional and residential subdivisions, complexes, structures, and their related infrastructures, by providing our clients with the needed expertise for their projects.

This report and its assessment was prepared by Mr. Andrejs Jansons. He has a Bachelor of Engineering degree from the University of Guelph and is an Engineer in Training (EIT No. 100133900) in Ontario. He has been trained to conduct Phase One and Two Environmental Site Assessments in accordance with the MOE Standard.

Mr. Ian Chiu is the Vice-President of Soil Engineers Ltd. He has a Bachelor's Degree in Applied Science (Civil) from the University of Toronto and is licensed to practice in Ontario (PEO Licence No. 8113706). He has 25 years of experience on various building and engineering projects in Ontario. He supervises the Environmental Services Section, has a comprehensive understanding of its projects, and is responsible for over 500 Phase One and Phase Two ESA reports with over 250 Records of Site Condition acknowledged by the MOE.

9.0 REFERENCES

Information in the Public Domain

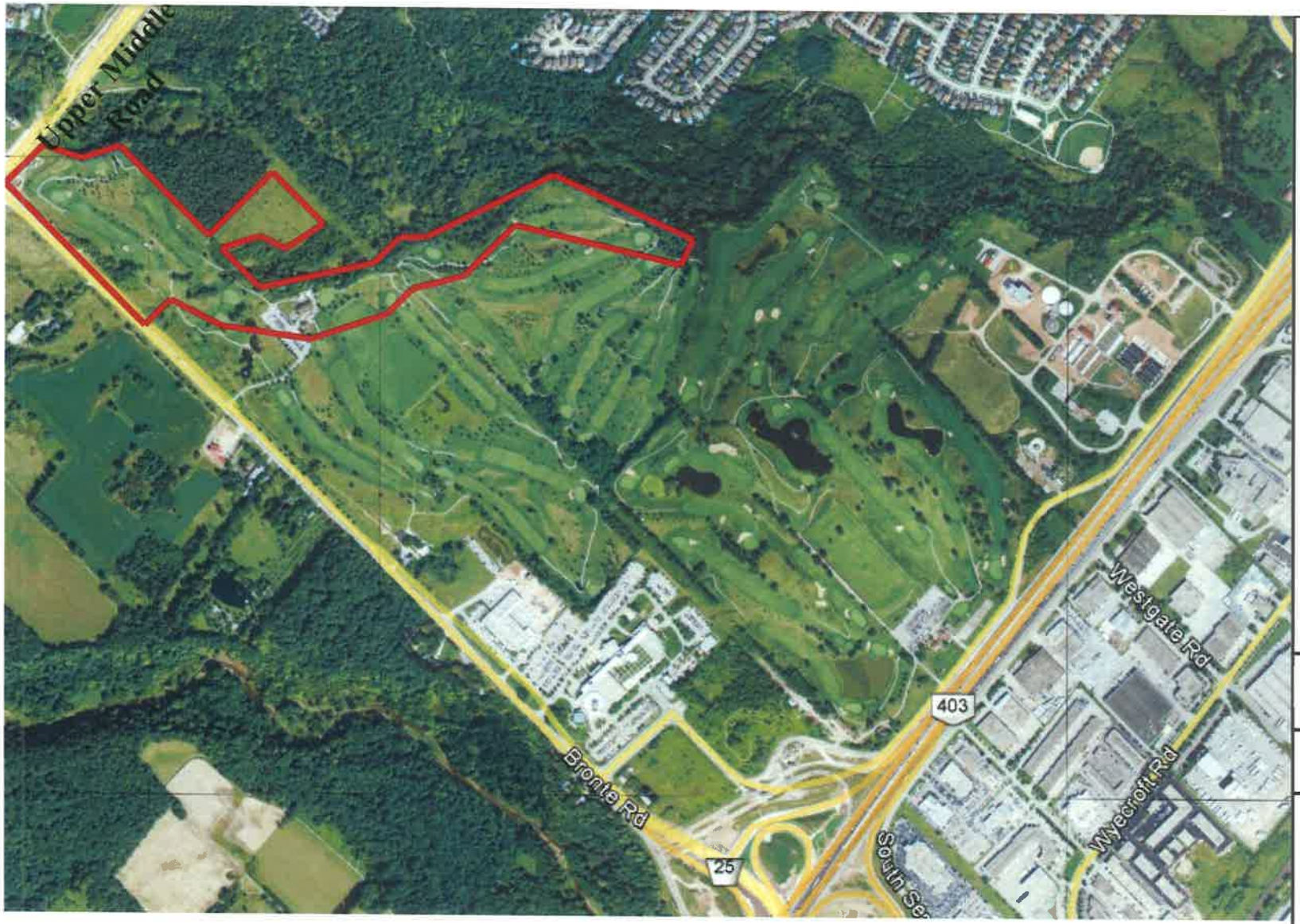
Environmental Protection Act (EPA). Part VII and VIII of Ontario Regulation 511/09. The Ontario Ministry of the Environment (MOE). (Amended 2009)

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

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

Ministry of Natural Resources, 1972, Topographic Map (1972)
Google Earth, 2011, Aerial Photograph (2012)
2010 Ontario Geological Survey (2012)

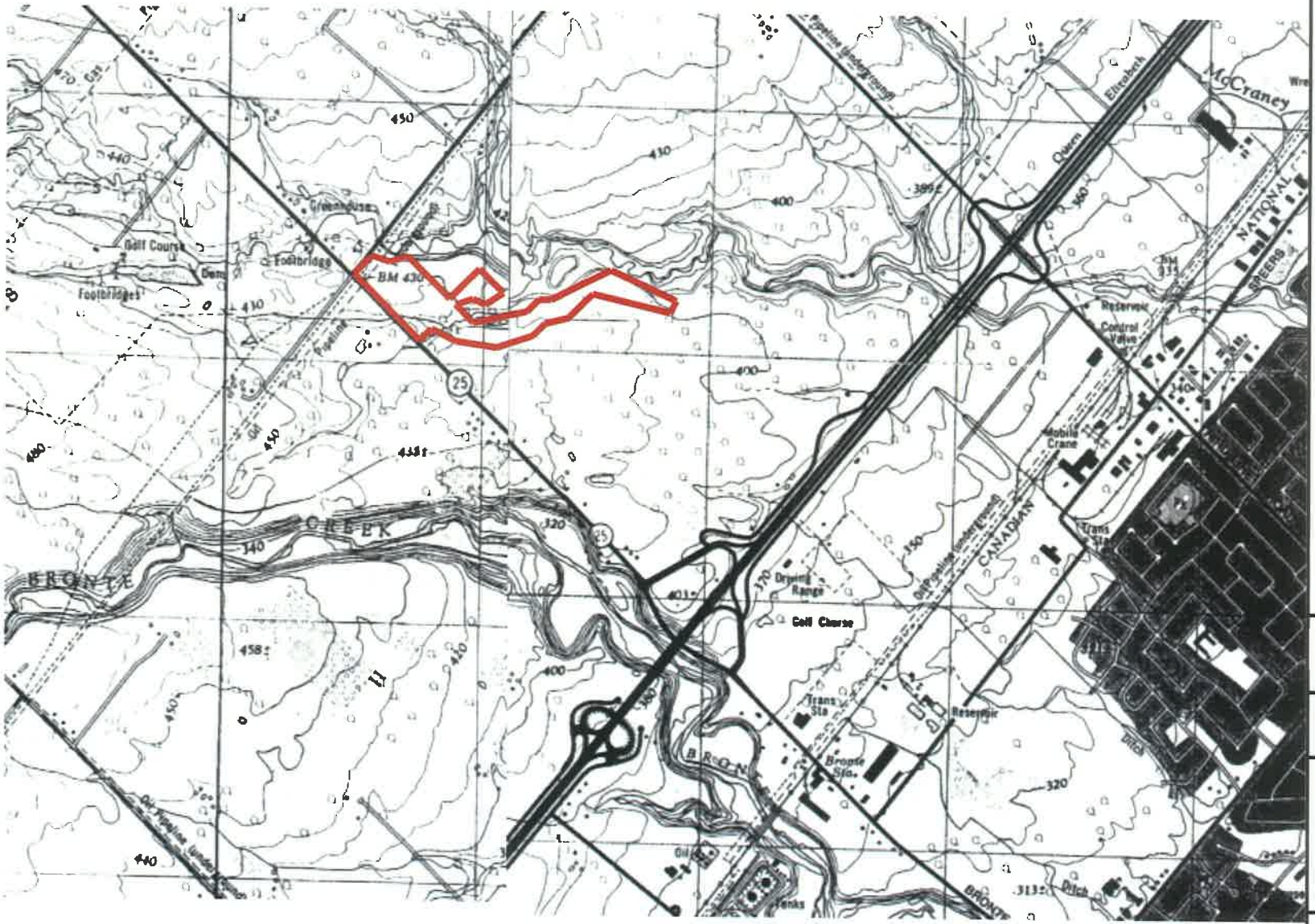


Approximate Site Location

Source: Google Earth
© 2012

Soil Engineers Ltd.

Title	Site Location Plan
Project	Proposed Residential Development Existing Golf Course 1401 Bronte Road Town of Oakville
Reference No.	1211-E073
Date	January 31, 2014
Scale	-
Drawing No.	1

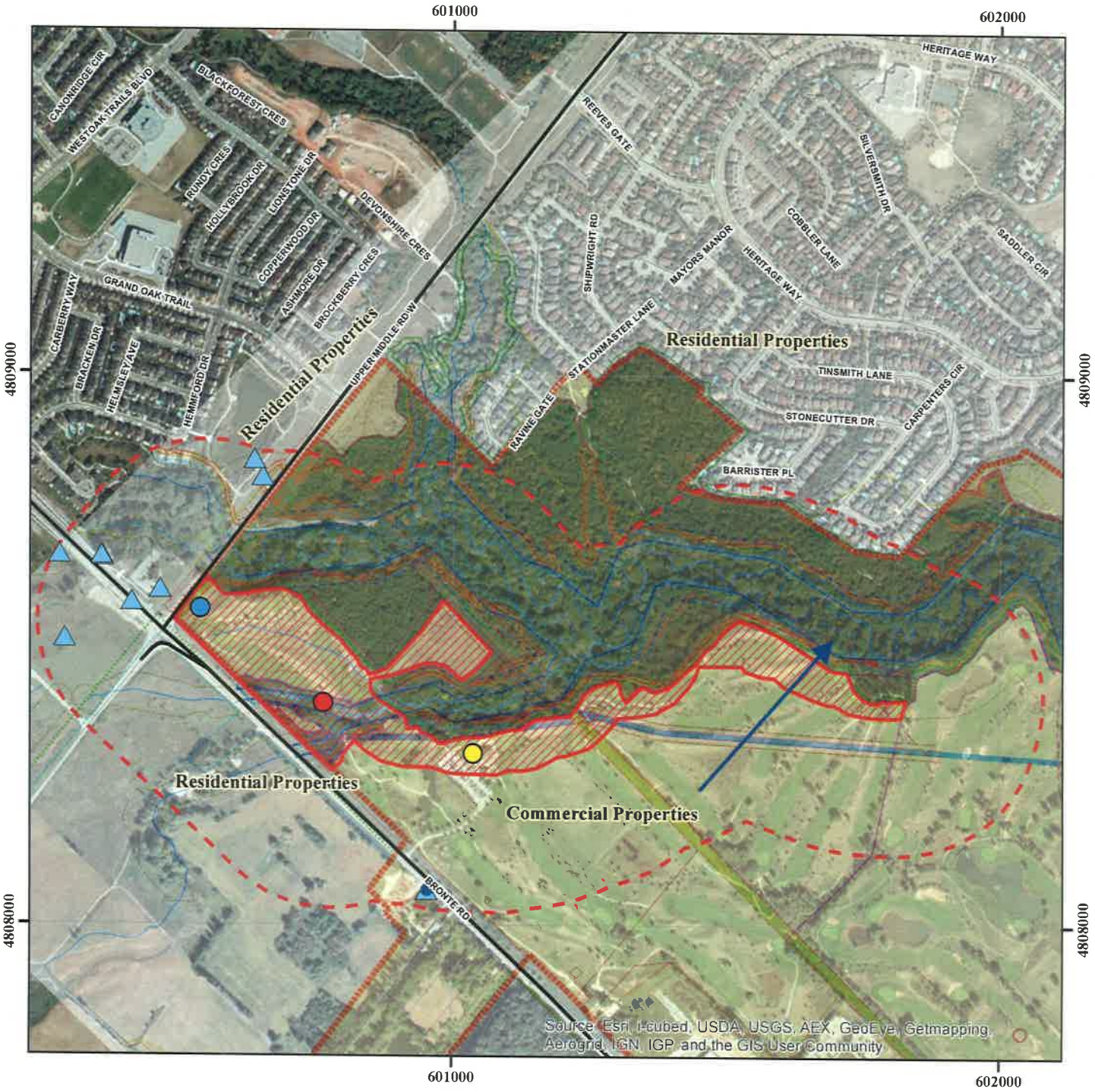


Approximate Site Location

Source: Ministry of Natural Resources
@ 1972

Soil Engineers Ltd.

Title	1972 Topographic Map
Project	Proposed Residential Development Existing Golf Course 1401 Bronte Road Town of Oakville
Reference No.	1211-E073
Date	January 31, 2014
Scale	1:25000
Drawing No.	2



N

- Approximate Boundary of Phase One Property
- Approximate Boundary of Phase One Study Area
- Water Well Location from EcoLog
- Water Well Location from Well Help Desk MOE
- ASTs
- Pesticides
- Electrical Transformer
- Assumed Groundwater Flow Direction
- Major Road
- Local Road

Soil Engineers Ltd.

Title: Phase One Conceptual Site Plan

Project:

Proposed Residential Development
Existing Golf Course
1401 Bront Road
Town of Oakville

Reference No. 1211-E073

Date: January 23, 2014

Scale: 0 50 100 200 300 400 Metres

Drawing No. 3

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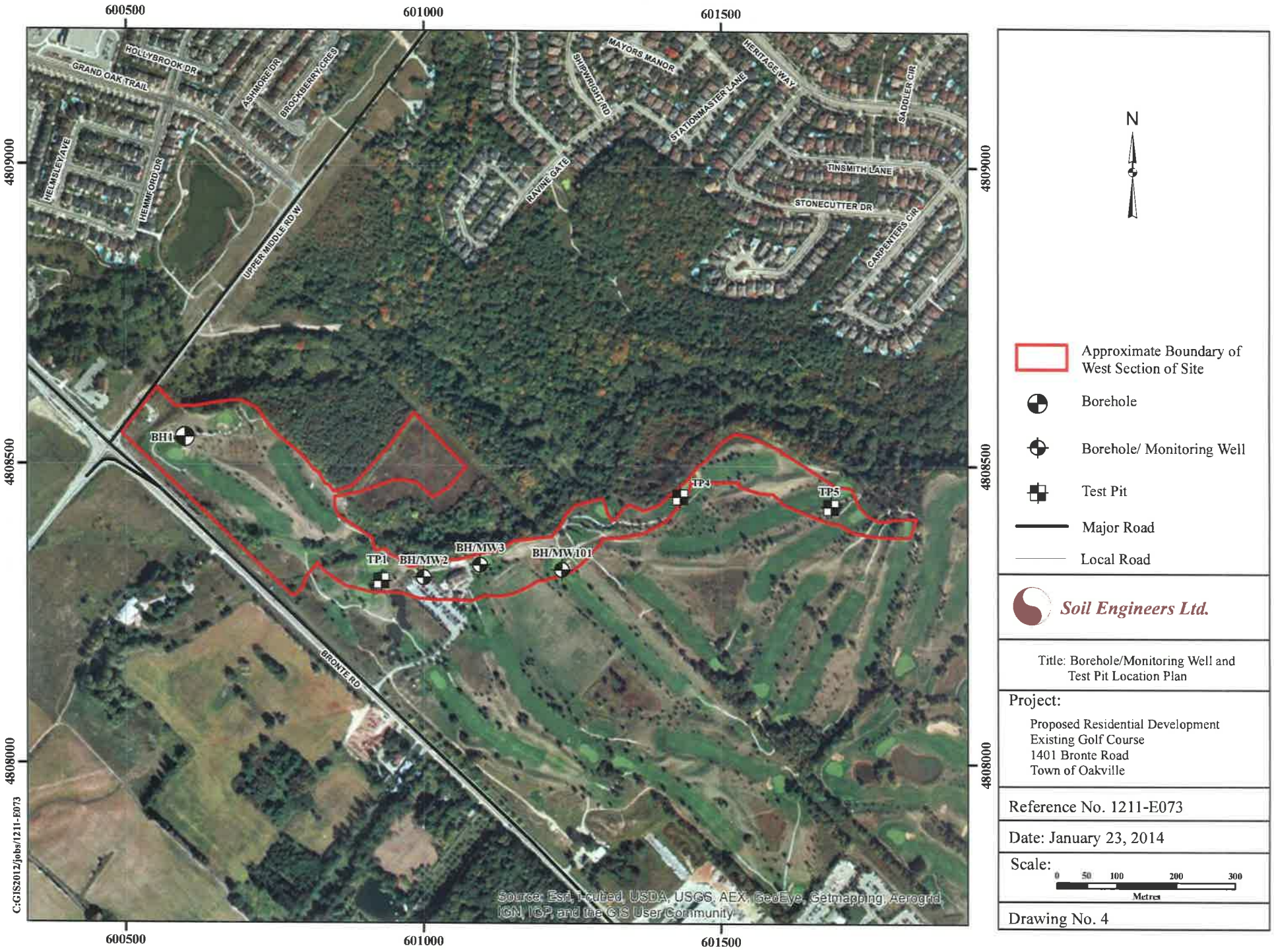
600500
601000
601500
4809000
4808500
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HOLLYBROOK DR
GRAND OAK TRAIL
ASHMORE DR
BROCKBERRY CRES
HELMSLEY AVE
HEMMEFORD DR
UPPER MIDDLE RD W
MAYORS MANOR
SHIPWRIGHT RD
STATIONMASTER LANE
HERITAGE WAY
SADDLER CIR
RAVINE GATE
TINSMITH LANE
STONECUTTER DR
CARPENTERS CIR
BRONTE RD
BH1
TP1
BH/MW2
BH/MW3
BH/MW101
TP4
TP5
Source: Esri, Trubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
C:GIS2012/jobs/1211-E073
N
Approximate Boundary of West Section of Site
Borehole
Borehole/ Monitoring Well
Test Pit
Major Road
Local Road
Soil Engineers Ltd.
Title: Borehole/Monitoring Well and Test Pit Location Plan
Project:
Proposed Residential Development
Existing Golf Course
1401 Bronte Road
Town of Oakville
Reference No. 1211-E073
Date: January 23, 2014
Scale:
0 50 100 200 300
Metres
Drawing No. 4

C:GIS2012/jobs/1211-E073

N

Approximate Boundary of Phase Two Property

Approximate Boundary of Phase One Study Area

Groundwater Flow Direction

Major Road

Local Road

Soil Engineers Ltd.

Title: Phase Two Conceptual Site Plan

Project:

Proposed Residential Development
Existing Golf Course
1401 Bront Road
Town of Oakville

Reference No. 1211-E073

Date: January 23, 2014

Scale: 0 50 100 200 300 400 500 Metres

Drawing No. 5

JOB NO: 1211-E073

LOG OF BOREHOLE NO: BH1

FIGURE NO: 1

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 1401 Bronte Road (Areas Along Creek)
Town of Oakville

METHOD OF BORING: Pionjar 120

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	10 20 30 40		
0.0	**30 cm TOPSOIL**							
	Brown **SANDY SILT, Fill**	1	TO	0			BH1/1: PCB	
		2	TO	5	1	5	BH1/2: M&I	
		3	TO	0	2			
2.1	**SILTY SAND, Till** Occ. wet silt seams and layers, cobbles and boulders	4	TO	0				
		5	TO	0	3			
		6	TO	0	4			
	brown greyish brown	7	TO	0				
4.9	**END OF BOREHOLE**				5			
					6			
					7			
					8			

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF BOREHOLE NO: BH/MW2 *FIGURE NO: 2*

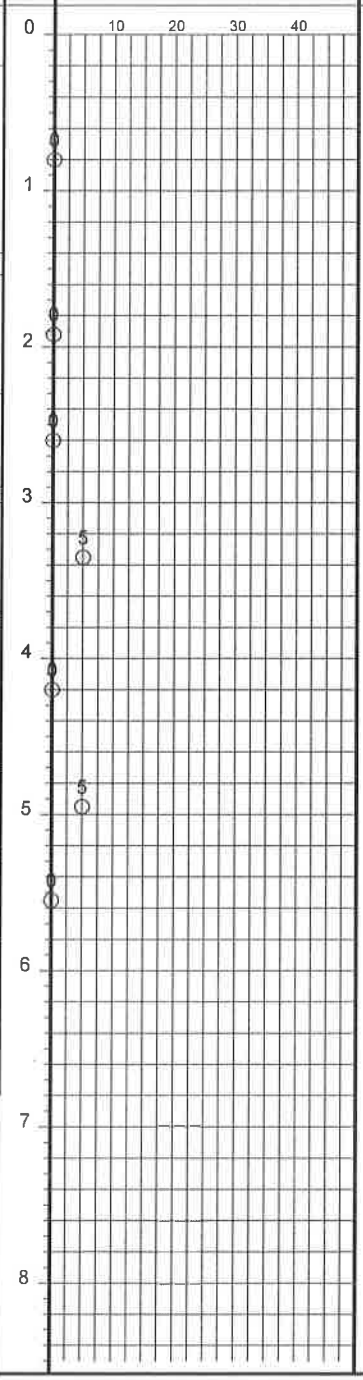
JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 1401 Bronte Road (Areas Along Creek)
Town of Oakville

METHOD OF BORING: Pionjar 120

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)
0.0	Pavement Surface			
	100 mm ASPHALTIC CONCRETE **200 mm GRANULAR, Fill**			
	Brown **SILTY SAND, Fill**	1	TO	0
		2	TO	0
		3	TO	0
		4	TO	5
		5	TO	0
		6	TO	5
5.3				
	Brown **SANDY SILT, Till** Occ. wet sand seams and layers, cobbles and boulders	7	TO	0
6.8				
	END OF BOREHOLE Installed 50 mm diameter standpipe to 6.8 m. Sand backfill from 3.6 to 6.8 m. Bentonite seal from 0.5 to 3.6 m. Concrete from 0.0 to 0.5 m. 3 m screen from 3.8 to 6.8 Provided with a monument casing.			



Comment

BH2/3: M&I

BH2/4: PHC

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF BOREHOLE NO: BH/MW3 *FIGURE NO: 3*

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 1401 Bronte Road (Areas Along Creek)
Town of Oakville

METHOD OF BORING: Pionjar 120

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Pavement Surface				0	40 80 120 160		
	100 mm ASPHALTIC CONCRETE **250 mm GRANULAR, Fill**							
	SILTY SAND, Fill	1	TO	0	1			
		2	TO	0	2			
		3	TO	0	3		BH3/3: M&I	
	brown	4	TO	30		30		
	brownish grey				4			
4.9	brown	5	TO	0				
	Brown **SANDY SILT, Till** Occ. wet sand seams and layers, cobbles and boulders	6	TO	170	5	170	BH3/6: PHC	
5.5	Brown **SILTY SAND, Till** Occ. wet silt seams and layers, cobbles and boulders	7	TO	0	6			
		8	TO	100		100		
6.9	**END OF BOREHOLE** Installed 50 mm diameter standpipe to 6.9 m. Sand backfill from 3.6 to 6.9 m. Bentonite seal from 0.5 to 3.6 m. Concrete from 0.0 to 0.5 m. 3 m screen from 3.9 to 6.9 m. Provided with a monument casing.				7			W.L. @ 3.9 m bgs at the time of sampling
					8			

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF BOREHOLE NO: 101

FIGURE NO: 4

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 1401 Bronte Road (Areas Along Creek)
Town of Oakville

METHOD OF BORING: Pionjar 120

DATE: January 7, 2014

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	10 20 30 40		
	Brown, Light grey, stiff **SILTY CLAY, Fill** some gravel no odour, dry	1	DO	5		5	BH101/1: M&I and OCP	
1.5		2	DO	5	1	5		
	Reddish brown, stiff **SILTY CLAY** trace of gravel and sand no odour	3	DO	5	2	5		
		4	DO	10		10		
		5	DO	5	3	5		
		6	DO	10	4	10	BH101/6 and Dup.: PHC and VOC	
	dry	7	DO	5	5	5		
	moist	8	DO	0		P		
		9	DO	-	6			
6.6	**END OF BOREHOLE** Installed 50 mm diameter standpipe to 6.1 m. Sand backfill from 2.4 to 6.1 m. Bentonite seal from 0.0 to 2.4 m. 3 m screen from 3.1 to 6.1 Provided with a monument casing.				7			W.L. @ 5.6 m bgs
					8			

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF TEST PIT NO: TP1

FIGURE NO: 5

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 1401 Bronte Road (Areas Alog Creek)
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	10 20 30 40		
0.1	**15 cm TOPSOIL**							
	SILTY SAND, Fill	1	CS	5		5	M&Is and OCP	
0.8	**END OF TEST PIT**				1			
					2			
					3			

Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF TEST PIT NO: TP4

FIGURE NO: 6

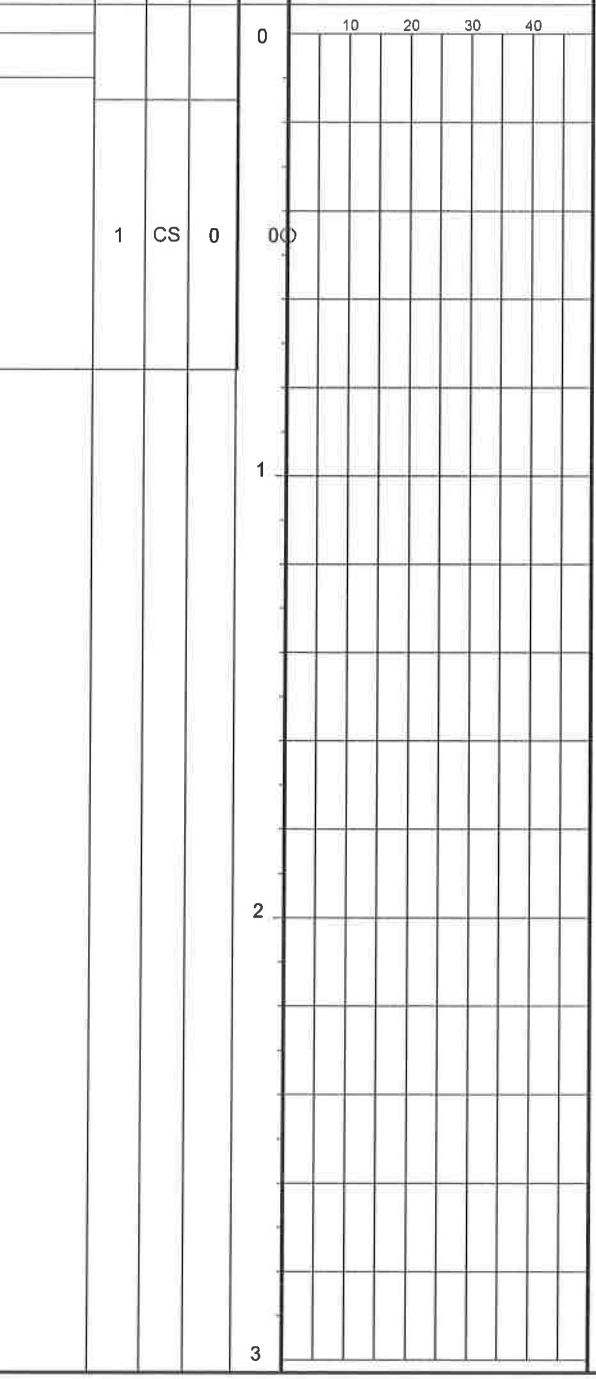
JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 1401 Bronte Road (Areas Alog Creek)
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0			
0.1	**10 cm TOPSOIL**							
	SILTY SAND, Fill	1	CS	0			M&Is and OCP	
0.8	**END OF TEST PIT**				1			
					2			
					3			



Soil Engineers Ltd.

JOB NO: 1211-E073

LOG OF TEST PIT NO: TP5

FIGURE NO: 7

JOB DESCRIPTION: Proposed Residential Development

JOB LOCATION: 1401 Bronte Road (Areas Alog Creek)
Town of Oakville

METHOD OF BORING: Geoprobe 7820

DATE: December 18 , 2012

Depth Elev. (m)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas (ppm)	Depth Scale (m)	Gas (ppm)	Comment	WATER LEVEL
0.0	Ground Surface				0	10 20 30 40		
0.1	**10 cm TOPSOIL**							
	SILTY SAND, Fill	1	CS	5		50	M&Is and OCP	
0.8	**END OF TEST PIT**				1			
					2			
					3			

Soil Engineers Ltd.

Soil Engineers Ltd.
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APPENDIX 'A'

SUMMARY TABLES
RESULTS OF CHEMICAL TESTING

REFERNCE NO. 1211-E073

SOIL CHEMICAL ANALYSIS - Inorganic Parameters

1401 Bronte Road, Town of Oakville

Sample	RDL*	TP1	TP4	TP5	BH1/2	BH2/3	Ontario Regulation 153/04 Table 8 Generic Site Condition Standards for use within 30m of a water body in a potable groundwater condition**
Depth (m)		0.5	0.5	0.5	1.2	2.5	
Soil Type		Silty Sand	Silty Sand	Silty Sand	Sandy Silt	Silty Sand	
Sample Date		18-Dec-12	18-Dec-12	18-Dec-12	18-Dec-12	18-Dec-12	
AGAT I.D.		4045826	4045831	4045833	4045839	4045840	
Antimony	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	1.3
Arsenic	1	6	4	9	5	7	18
Barium	2	90	57	41	81	132	220
Beryllium	0.5	1	0.6	<0.5	0.6	0.7	2.5
Boron	5	5	<5	<5	7	11	36
Boron (Hot Water Soluble)	0.1	0.3	0.29	0.28	<0.1	0.18	1.5
Cadmium	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2
Chromium (total)	2	26	19	11	19	21	70
Cobalt	0.5	13.2	9.5	4.5	12.3	14.6	22
Copper	1	32	22	24	28	40	92
Lead	1	19	15	34	11	10	120
Molybdenum	0.5	0.5	<0.5	<0.5	0.5	0.8	2
Nickel	1	29	16	9	25	29	82
Selenium	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1.5
Silver	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5
Thallium	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1
Uranium	0.5	0.6	<0.5	<0.5	0.6	0.6	2.5
Vanadium	1	35	26	16	26	28	86
Zinc	5	84	67	45	64	69	290
Chromium (VI)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.66
Cyanide	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	0.051
Mercury	0.1	<0.10	<0.10	0.14	<0.10	<0.10	0.27
Electrical Conductivity (EC)	0.005	0.118	0.145	0.145	0.147	0.142	0.7
Sodium Adsorption Ratio (SAR)	-	0.074	0.068	0.057	0.150	0.146	5
pH	-	6.83	6.96	7.38	7.79	7.80	5 - 9

Analysis by AGAT Laboratories Ltd.
All results in µg/g (ppm) and based on dry weight basis, except EC (mS/cm), SAR and pH (dimensionless).
nd - not detected at reporting detection limit (RDL), nv - no value, na - not analysed.
* Analytical RDLs are shown except as indicated in brackets.
** Standards shown are for all types of property use other than agricultural use.
Exceedances of Table 8 Standards or pH out of prescribed range are shown in **bold**.

SOIL CHEMICAL ANALYSIS - Inorganic Parameters

1401 Bronte Road, Town of Oakville

Sample	RDL*	DUP2	BH3/3	BH101/1	Ontario Regulation 153/04 Table 8 Generic Site Condition Standards for use within 30m of a water body in a potable groundwater condition**
Depth (m)		0.5	2.5	0.5	
Soil Type		Silty sand	Silty Sand	Silty clay	
Sample Date		18-Dec-12	28-Dec-12	7-Jan-14	
AGAT I.D.		4045842	4045843	5085311	
Antimony	0.8	<0.8	<0.8	<0.8	1.3
Arsenic	1	2	6	5	18
Barium	2	18	116	83	220
Beryllium	0.5	<0.5	0.6	0.7	2.5
Boron	5	<5	8	10	36
Boron (Hot Water Soluble)	0.1	<0.1	<0.1	0.13	1.5
Cadmium	0.5	<0.5	<0.5	<0.5	1.2
Chromium (total)	2	6	20	20	70
Cobalt	0.5	3.3	13.8	12.1	22
Copper	1	13	37	26	92
Lead	1	4	13	10	120
Molybdenum	0.5	<0.5	0.7	<0.5	2
Nickel	1	5	28	23	82
Selenium	0.4	<0.4	<0.4	<0.4	1.5
Silver	0.2	<0.2	<0.2	<0.2	0.5
Thallium	0.4	<0.4	<0.4	<0.4	1
Uranium	0.5	<0.5	0.6	<0.5	2.5
Vanadium	1	11	27	29	86
Zinc	5	19	69	58	290
Chromium (VI)	0.2	<0.2	<0.2	<0.2	0.66
Cyanide	0.04	<0.04	<0.04	<0.04	0.051
Mercury	0.1	<0.1	<0.1	<0.1	0.27
Electrical Conductivity (EC)	0.005	0.102	0.164	0.204	0.7
odium Adsorption Ratio (SA	-	0.095	0.134	0.104	5
pH	-	7.77	7.76	7.9	5 - 9

Analysis by AGAT Laboratories Ltd.
All results in µg/g (ppm) and based on dry weight basis, except EC (mS/cm), SAR and pH (dimensionless).
nd - not detected at reporting detection limit (RDL), nv - no value, na - not analysed.
* Analytical RDLs are shown except as indicated in brackets.
** Standards shown are for all types of property use other than agricultural use.
Exceedances of Table 8 Standards or pH out of prescribed range are shown in **bold**.

SOIL CHEMICAL ANALYSIS - Organo-Chlorinated Pesticides (OCPs) and Polychlorinated Biphenyls (PCBs)

1401 Bronte Road, Town of Oakville

Sample	RDL*	TP1	TP4	TP5	BH1/1	BH101/1	Ontario Regulation 153/04 Table 8 Soil Standards**
Soil Type		SaSi Fill	SaSi Fill	SaSi Fill	SaSi Fill	SiClay Fill	
Sample Date		18-Dec-12	18-Dec-12	18-Dec-12	18-Dec-12	8-Jan-14	
AGAT I.D.		4045826	4045831	4045833	4045838	5092746	
Gamma-Hexachlorocyclohexane	0.005	<0.005	<0.005	<0.005		<0.005	0.01
Heptachlor	0.005	<0.005	<0.005	<0.005		<0.005	0.05
Aldrin	0.005	<0.005	<0.005	<0.005		<0.005	0.05
Heptachlor Epoxide	0.005	<0.005	<0.005	<0.005		<0.005	0.05
Endosulfan	0.005	<0.005	<0.005	<0.005		<0.005	0.04
Chlordane	0.007	<0.007	<0.007	<0.007		<0.007	0.05
DDE	0.007	<0.007	<0.007	0.031		<0.007	0.05
DDD	0.007	<0.007	<0.007	<0.007		<0.007	0.05
DDT	0.007	<0.007	<0.007	<0.007		<0.007	1.4
Dieldrin	0.005	<0.005	<0.005	<0.005		<0.005	0.05
Endrin	0.005	<0.005	<0.005	<0.005		<0.005	0.04
Methoxychlor	0.005	<0.005	<0.005	<0.005		<0.005	0.05
Hexachlorobenzene	0.005	<0.005	<0.005	<0.005		<0.005	0.02
Hexachlorobutadiene	0.01	<0.01	<0.01	<0.01		<0.01	0.01
Hexachloroethane	0.01	<0.01	<0.01	<0.01		<0.01	0.01
Polychlorinated Biphenyls	0.01				<0.1		0.3

Analysis by AGAT Laboratories Ltd.
All results in ppm (ug/g) and based on dry weight basis; nd - not detected at reporting detection limit (RDL).
na - not analysed.
* Analytical RDLs are shown except as indicated in brackets.
** Standards shown are for all property uses other than agricultural use.
Exceedances of Table 8 Standards are shown in **bold**.

SOIL CHEMICAL ANALYSIS - Volatile Organic Compounds (VOCs)

1401 Bronte Road, Town of Oakville

Sample	RDL*	Dup10	BH101/6	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)		4.9	4.9	
Soil Type		SiClay	SiClay	
Sample Date		8-Jan-14	8-Jan-14	
AGAT I.D.		5092747	5085312	
Field Vapour Reading		10 ppm	10 ppm	
Dichlorodifluoromethane	0.05	<0.05	<0.05	0.05
Vinyl Chloride	0.02	<0.02	<0.02	0.02
Bromomethane	0.05	<0.05	<0.05	0.05
Trichlorofluoromethane	0.05	<0.05	<0.05	0.25
Acetone	0.50	<0.50	<0.50	0.5
Dichloroethylene - 1,1	0.05	<0.05	<0.05	0.05
Methylene Chloride	0.05	<0.05	<0.05	0.05
Dichloroethylene, trans - 1,2	0.05	<0.05	<0.05	0.05
Methyl t-Butyl Ether	0.05	<0.05	<0.05	0.05
Dichloroethane, - 1,1	0.02	<0.02	<0.02	0.05
Methyl Ethyl Ketone	0.50	<0.50	<0.50	0.5
Dichloroethylene, cis - 1,2	0.02	<0.02	<0.02	0.05
Chloroform	0.04	<0.04	<0.04	0.05
Dichloroethane, - 1,2	0.03	<0.03	<0.03	0.05
Trichloroethane, - 1,1,1	0.05	<0.05	<0.05	0.05
Carbon Tetrachloride	0.05	<0.05	<0.05	0.05
Benzene	0.02	<0.02	<0.02	0.02
Dichloropropane, - 1,2	0.03	<0.03	<0.03	0.05
Trichloroethylene	0.03	<0.03	<0.03	0.05
Bromodichloromethane	0.05	<0.05	<0.05	0.05
Methyl Isobutyl Ketone	0.50	<0.50	<0.50	0.5
Trichloroethane, - 1,1,2	0.04	<0.04	<0.04	0.05
Toluene	0.05	<0.05	<0.05	0.2
Dibromochloromethane	0.05	<0.05	<0.05	0.05
Ethylene Dibromide	0.04	<0.04	<0.04	0.05
Tetrachloroethylene	0.05	<0.05	<0.05	0.05
Tetrachloroethane, - 1,1,1,2	0.04	<0.04	<0.04	0.05
Chlorobenzene	0.05	<0.05	<0.05	0.05
Ethylbenzene	0.05	<0.05	<0.05	0.05
Bromoform	0.05	<0.05	<0.05	0.05
Styrene	0.05	<0.05	<0.05	0.05
Tetrachloroethane, - 1,1,2,2	0.05	<0.05	<0.05	0.05
Dichlorobenzene, - 1,3	0.05	<0.05	<0.05	0.05
Dichlorobenzene, - 1,4	0.05	<0.05	<0.05	0.05
Dichlorobenzene, - 1,2	0.05	<0.05	<0.05	0.05
Xylenes	0.05	<0.05	<0.05	0.05
Dichloropropene, - 1,3	0.04	<0.04	<0.04	0.05
n-Hexane	0.05	<0.05	<0.05	0.05

Analysis by AGAT Laboratories Ltd.

All results in ppm (ug/g) and based on dry weight basis; nd - detected at reporting detection limit (RDL).

* Analytical RDLs are shown except as indicated in brackets.

** Standards shown are for all property uses other than agricultural use.

Exceedances of Table 8 Standards are shown in **bold**.

Table 5

SOIL CHEMICAL ANALYSIS - Petroleum Parameters

1401 Bronte Road, Town of Oakville

Sample Location	RDL*	BH2/4	BH3/6	BH 101/6	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (mbgs)		3.5	4.8	4.9	
Soil Type		SiSa Fill	SaSi Till	SiClay	
Sample Date		18-Dec-12	18-Dec-12	8-Jan-14	
AGAT I.D.		4045841	4045844	5085312	
Field Vapour Reading (ppm or %LEL)		5 ppm	170 ppm	10 ppm	
Benzene	0.02	<0.02	<0.02		0.02
Toluene	0.08	<0.08	<0.08		0.2
Ethylbenzene	0.05	<0.05	<0.05		0.05
Xylenes	0.05	<0.05	<0.05		0.05
F1 (C6 to C10 - BTEX)	5	<5	<5	<5	25
F2 (C10 to C16)	10	<10	<10	<10	10
F3 (C16 to C34)	50	<50	<50	<50	240
F4 (C34 to C50)	50	<50	<50	<50	120

Analysis by AGAT Laboratories Ltd.
All results in ppm (ug/g) and based on dry weight basis; nd - not detected at reporting detection limit (RDL); nm - not measured; na - not analysed.
* Analytical RDLs are shown except as indicated in brackets.
** Standards shown are for all types of property use other than agricultural use.
*** F4G (gravimetric determination) result shown because chromatograph did not return to baseline and F4G result is larger than F4 (GC determination) result.
Exceedances of Table 8 Standards are shown in **bold.**

Soil Field Duplicates - Relative Percent Differences
Metals and Inorganic Parameters

1401 Bronte Road, Town of Oakville
18-Dec-2012

Location		TP5	Dup2		Alert
AGAT I.D.	RDL	4045833	4045842	RPD (%)	Limit
Antimony	0.8	nd	nd	nc	30%
Arsenic	1	9.0	2	127	30%
Barium	2	41.0	18	78	40%
Beryllium	0.5	nd	nd	nc	30%
Boron	5	0.28	nd	nc	30%
Boron (Hot Water Soluble)	0.1	nd	nd	nc	40%
Cadmium	0.5	11.0	nd	nc	30%
Chromium (total)	2	4.5	6	29	30%
Cobalt	0.5	24.0	3.3	152	30%
Copper	1	34.0	13	89	30%
Lead	1	4	4	0	40%
Molybdenum	0.5	9.0	nd	nc	40%
Nickel	1	5.0	5	0	30%
Selenium	0.4	nd	nd	nc	30%
Silver	0.2	nd	nd	nc	40%
Thallium	0.4	nd	nd	nc	30%
Uranium	0.5	16.0	nd	nc	30%
Vanadium	1	45.0	11	121	30%
Zinc	5	19	19	0	30%
Chromium (VI)	0.2	nd	nd	nc	35%
Cyanide	0.04	nd	nd	nc	35%
Mercury	0.1	0.14	nd	nc	30%
Electrical Conductivity (EC)	0.005	0.145	0.102	35	20%
Sodium Adsorption Ratio (SAR)	-	0.057	0.095	50	nv
pH	-	7.38	7.77	5	30%

Note:
nd - not detected; nv - no alert value; nc - not calculable, since one (or both) of the results are <5x RDL
Results shown are in ug/g (ppm).
Exceedance of alert limits is in **bold.**

GROUND WATER CHEMICAL ANALYSIS - Inorganic Parameters

1401 Bronte Road, Town of Oakville

Sample	RDL*	MW2	MW3	MW101	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Ground Water Depth (m)		4.4	4.7	5.6	
Sample Date		28-Dec-12	28-Dec-12	10-Jan-14	
AGAT I.D.		4050980	4050981	5088193	
Antimony	0.5	<0.5	<0.5	<0.5	1.5
Arsenic	1.0	<1.0	<1.0	<1.0	13
Barium	2.0	108	103	50	610
Beryllium	0.5	<0.5	<0.5	<0.5	0.5
Boron	10	104	76.0	37.8	1,700
Boron (Hot Water Soluble)	0.1	na	na	na	nv
Cadmium	0.2	0.2	<0.2	<0.2	0.5
Chloride	500	192000	189000	19000	790,000
Chromium (total)	2.0	5.0	5.6	<2.0	11
Cobalt	0.5	1.3	0.7	<0.5	3.8
Copper	1.0	1.6	1.5	<1.0	5
Lead	0.5	<0.5	<0.5	<0.5	1.9
Molybdenum	0.5	29.7	8.1	4.5	70
Nickel	1.0	8.4	8.2	<1.0	14
Selenium	1.0	2.4	1.9	1.0	5
Silver	0.2	0.4	0.2	<0.2	0.3
Sodium	500	65500	89700	12800	490,000
Thallium	0.3	<0.3	<0.3	<0.3	0.5
Uranium	0.5	2.2	3.5	1.5	8.9
Vanadium	0.4	1.4	2.0	<0.4	3.9
Zinc	5	10.3	62.0	<5.0	160
Chromium (VI)	5	<5	<5	<5	25
Cyanide	2	<2	<2	<2	5
Mercury	0.02	<0.02	<0.02	<0.02	0.1

Analysis by AGAT Laboratories Ltd.

All results in µg/L (ppb); nd - not detected at reporting detection limit (RDL), nv - no value, na - not analysed.

* Analytical RDLs are shown except as indicated in brackets.

** Standards shown are for all types of property use other than agricultural use.

Exceedances of Table 8 Standards are shown in **bold**.

GROUND WATER CHEMICAL ANALYSIS - Organo-Chlorinated Pesticides (OCPs) and Polychlorinated Biphenyls (PCBs)

1401 Bronte Road, Town of Oakville

Sample	RDL*	BH101/1	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Sample Date		7-Jan-14	
AGAT I.D.		5092746	
Gamma-Hexachlorocyclohexane	0.01	<0.005	1.2
Heptachlor	0.01	<0.005	1.5
Aldrin	0.01	<0.005	0.35
Heptachlor Epoxide	0.01	<0.005	0.048
Endosulfan	0.05	<0.005	1.5
Chlordane	0.04	<0.007	7
DDE	0.01	<0.007	10
DDD	0.05	<0.007	10
DDT	0.04	<0.007	2.8
Dieldrin	0.02	<0.005	0.35
Endrin	0.05	<0.005	0.48
Methoxychlor	0.04	<0.005	6.5
Hexachlorobenzene	0.01	<0.005	1
Hexachlorobutadiene	0.01	<0.01	0.44
Hexachloroethane	0.01	<0.01	2.1
Polychlorinated Biphenyls	0.01	na	3

Analysis by AGAT Laboratories Ltd.
All results in µg/L (ppb); nd - not detected at reporting detection limit (RDL); na - not analysed.
* Analytical RDLs are shown except as indicated in brackets.
** Standards shown are for all property uses and coarse textured soils in a potable ground water condition.
Exceedances of Table 8 Standards are shown in **bold**.

GROUND WATER CHEMICAL ANALYSIS - Petroleum Parameters

1401 Bronte Road, Town of Oakville

Sample Location	RDL*	MW2	MW3	MW101	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Ground Water Depth (mbgs)		4.4	4.7	5.6	
Sample Date		28-Dec-12	28-Dec-12	10-Jan-14	
AGAT I.D.		4050980	4050981	5088193	
Benzene	0.2	<0.20	<0.20	<0.20	5
Toluene	0.2	<0.20	<0.20	0.40	22
Ethylbenzene	0.1	<0.10	<0.10	0.13	2.4
Xylenes	0.2	<0.20	<0.20	1.0	300
F1 (C6 to C10 - BTEX)	25	<25	<25	<25	420
F2 (C10 to C16)	100	<100	<100	<100	150
F3 (C16 to C34)	100	<100	<100	<100	500
F4 (C34 to C50)	100	<100	<100	<100	500

Analysis by AGAT Laboratories Ltd.

All results in µg/L (ppb); nd - not detected at reporting detection limit (RDL); nm - not measured; na - not analysed.

* Analytical RDLs are shown except as indicated in brackets.

** Standards shown are for all types of property use.

*** F4G (gravimetric determination) result shown because chromatograph did not return to baseline and F4G result is larger than F4 (GC determination) result.

Exceedances of Table 8 Standards are shown in **bold.**

GROUND WATER CHEMICAL ANALYSIS - Volatile Organic Compounds (VOCs)

1401 Bronte Road, Town of Oakville

Sample	RDL*	MW2	MW3	MW101	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Ground Water Depth (mbgs)		4.4	4.7	5.6	
Sample Date		28-Dec-12	28-Dec-12	10-Jan-14	
AGAT I.D.		4050980	4050981	5088193	
Dichlorodifluoromethane	0.20	<0.20	<0.20	<0.20	590
Vinyl Chloride	0.17	<0.17	<0.17	<0.17	0.5
Bromomethane	0.20	<0.20	<0.20	<0.20	0.89
Trichlorofluoromethane	0.40	<0.40	<0.40	<0.40	150
Acetone	1.0	<1.0	<1.0	<1.0	2,700
Dichloroethylene - 1,1	0.30	<0.30	<0.30	<0.30	0.5
Methylene Chloride	0.30	<0.30	<0.30	<0.30	5.0
Dichloroethylene, trans - 1,2	0.20	<0.20	<0.20	<0.20	1.6
Methyl t-Butyl Ether	0.20	<0.20	<0.20	<0.20	15
Dichloroethane, - 1,1	0.30	<0.30	<0.30	<0.30	0.5
Methyl Ethyl Ketone	1.0	<1.0	<1.0	<1.0	400
Dichloroethylene, cis - 1,2	0.20	<0.20	<0.20	<0.20	1.6
Chloroform	0.20	<0.20	<0.20	<0.20	2
Dichloroethane, - 1,2	0.20	<0.20	<0.20	<0.20	0.5
Trichloroethane, - 1,1,1	0.30	<0.30	<0.30	<0.30	0.5
Carbon Tetrachloride	0.20	<0.20	<0.20	<0.20	0.2
Benzene	0.20	<0.20	<0.20	<0.20	0.5
Dichloropropane, - 1,2	0.20	<0.20	<0.20	<0.20	0.5
Trichloroethylene	0.20	<0.20	<0.20	<0.20	0.5
Bromodichloromethane	0.20	<0.20	<0.20	<0.20	2
Methyl Isobutyl Ketone	1.0	<1.0	<1.0	<1.0	640
Trichloroethane, - 1,1,2	0.20	<0.20	<0.20	<0.20	0.5
Toluene	0.20	<0.20	<0.20	0.40	0.8
Dibromochloromethane	0.10	<0.10	<0.10	<0.10	2
Ethylene Dibromide	0.10	<0.10	<0.10	<0.10	0.2
Tetrachloroethylene	0.20	<0.20	<0.20	<0.20	0.5
Tetrachloroethane, - 1,1,1,2	0.10	<0.10	<0.10	<0.10	1.1
Chlorobenzene	0.10	<0.10	<0.10	<0.10	0.5
Ethylbenzene	0.10	<0.10	<0.10	0.13	0.5
Bromoform	0.10	<0.20	<0.20	<0.10	5
Styrene	0.10	<0.10	<0.10	<0.10	0.5
Tetrachloroethane, - 1,1,2,2	0.10	<0.10	<0.10	<0.10	0.5
Dichlorobenzene, - 1,3	0.10	<0.10	<0.10	<0.10	0.5
Dichlorobenzene, - 1,4	0.10	<0.10	<0.10	<0.10	0.5
Dichlorobenzene, - 1,2	0.10	<0.10	<0.10	<0.10	0.5
Xylenes	0.20	<0.30	<0.30	<0.30	72
Dichloropropene, - 1,3	0.30	<0.20	<0.20	1.0	0.5
n-Hexane	0.20	<0.20	<0.20	<0.20	5.0

Analysis by AGAT Laboratories Ltd.

All results in µg/L (ppb); nd - detected at reporting detection limit (RDL); nv - no value; na - not analysed.

* Analytical RDLs are shown except as indicated in brackets.

** Standards shown are for all property uses.

Exceedances of Table 8 Standards are shown in **bold**.

Ground Water Field Duplicates - Relative Percent Differences
Volatile Organic Compounds (VOCs)

1401 Bronte Road, Town of Oakville

10-Jan-2014

Location		MW101	Dup		Alert
AGAT I.D.	RDL	5088193	5088202	RPD (%)	Limit
Dichlorodifluoromethane	0.20	nd	nd	nc	30%
Vinyl Chloride	0.17	nd	nd	nc	30%
Bromomethane	0.20	nd	nd	nc	30%
Trichlorofluoromethane	0.40	nd	nd	nc	30%
Acetone	1.0	nd	nd	nc	30%
Dichloroethylene - 1,1	0.30	nd	nd	nc	30%
Methylene Chloride	0.30	nd	nd	nc	30%
Dichloroethylene, trans - 1,2	0.20	nd	nd	nc	30%
Methyl t-Butyl Ether	0.20	nd	nd	nc	30%
Dichloroethane, - 1,1	0.30	nd	nd	nc	30%
Methyl Ethyl Ketone	1.0	nd	nd	nc	30%
Dichloroethylene, cis - 1,2	0.20	nd	nd	nc	30%
Chloroform	0.20	nd	nd	nc	30%
Dichloroethane, - 1,2	0.20	nd	nd	nc	30%
Trichloroethane, - 1,1,1	0.30	nd	nd	nc	30%
Carbon Tetrachloride	0.20	nd	nd	nc	30%
Benzene	0.20	nd	nd	nc	30%
Dichloropropane, - 1,2	0.20	nd	nd	nc	30%
Trichloroethylene	0.20	nd	nd	nc	30%
Bromodichloromethane	0.20	nd	nd	nc	30%
Methyl Isobutyl Ketone	1.0	nd	nd	nc	30%
Trichloroethane, - 1,1,2	0.20	nd	nd	nc	30%
Toluene	0.20	0.4	0.42	5	30%
Dibromochloromethane	0.10	nd	nd	nc	30%
Ethylene Dibromide	0.10	nd	nd	nc	30%
Tetrachloroethylene	0.20	nd	nd	nc	30%
Tetrachloroethane, - 1,1,1,2	0.10	nd	nd	nc	30%
Chlorobenzene	0.10	nd	nd	nc	30%
Ethylbenzene	0.10	0.13	0.13	0	30%
Bromoform	0.10	nd	nd	nc	30%
Styrene	0.10	nd	nd	nc	30%
Tetrachloroethane, - 1,1,2,2	0.10	nd	nd	nc	30%
Dichlorobenzene, - 1,3	0.10	nd	nd	nc	30%
Dichlorobenzene, - 1,4	0.10	nd	nd	nc	30%
Dichlorobenzene, - 1,2	0.10	nd	nd	nc	30%
Xylenes	0.20	nd	nd	nc	30%
Dichloropropene, - 1,3	0.30	1	1.1	10	30%
n-Hexane	0.20	nd	nd	nc	30%

Note:
nd - not detected; nv - no alert value; nc - not calculable, since one (or both) of the results are <5x RDL
Results shown are in ug/g (ppm).
Exceedance of alert limits is in **bold**.

Soil Engineers Ltd.
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APPENDIX 'B'

CERTIFICATES OF ANALYSIS
(SOIL SAMPLES AND QA/QC SAMPLES)

REFERNCE NO. 1211-E073

AGAT Laboratories

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CLIENT NAME: SOIL ENGINEERS LIMITED
100 NUGGET AVENUE
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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T675486

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

TRACE ORGANICS REVIEWED BY: Jacky Takeuchi, BScH (Chem Eng), BSc (Bio), C.Chem, Laboratory Manager

DATE REPORTED: Dec 31, 2012

PAGES (INCLUDING COVER): 12

VERSION*: 6

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES
VERSION 6:
Reporting Samples TP1, TP4, TP5, DUP2, BH1, BH2, and BH3 compared to table 8 (July 10th 2013)

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12T675486
PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		TP1	TP4	TP5	BH 1/2	BH 2/3	DUP 2	BH 3/3
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045826	4045831	4045833	4045839	4045840	4045842	4045843
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	6	4	9	5	7	2	6
Barium	µg/g	220	2	90	57	41	81	132	18	116
Beryllium	µg/g	2.5	0.5	1.0	0.6	<0.5	0.6	0.7	<0.5	0.6
Boron	µg/g	36	5	5	<5	<5	7	11	<5	8
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.30	0.29	0.28	<0.10	0.18	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	2	26	19	11	19	21	6	20
Cobalt	µg/g	22	0.5	13.2	9.5	4.5	12.3	14.6	3.3	13.8
Copper	µg/g	92	1	32	22	24	28	40	13	37
Lead	µg/g	120	1	19	15	34	11	10	4	13
Molybdenum	µg/g	2	0.5	0.5	<0.5	<0.5	0.5	0.8	<0.5	0.7
Nickel	µg/g	82	1	29	16	9	25	29	5	28
Selenium	µg/g	1.5	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	0.6	<0.5	<0.5	0.6	0.6	<0.5	0.6
Vanadium	µg/g	86	1	35	26	16	26	28	11	27
Zinc	µg/g	290	5	84	67	45	64	69	19	69
Chromium VI	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	0.14	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.118	0.145	0.145	0.147	0.142	0.102	0.164
Sodium Adsorption Ratio	NA	5	NA	0.074	0.068	0.057	0.150	0.146	0.095	0.134
pH, 2:1 CaCl2 Extraction	pH Units		NA	6.83	6.96	7.38	7.79	7.80	7.77	7.76

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New
4045826-4045843 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Elizabeth Rolakowska

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Certificate of Analysis

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		TP1	TP4	TP5
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045826	4045831	4045833
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007	<0.007	0.031
DDD	µg/g	0.05	0.007	<0.007	<0.007	<0.007
DDT	µg/g		0.007	<0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.02	0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.01	0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	23.5	24.8	16.0
Surrogate	**Unit**	**Acceptable Limits**				
TCMX	%	50-140		62	86	55
Decachlorobiphenyl	%	60-130		64	86	69

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New

4045826-4045833 Results are based on the dry weight of the soil.
Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By: Jordy Takeuchi

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AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PCBs (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		BH 1/1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		12/18/2012
Parameter	Unit	G / S	RDL	4045838
Aroclor 1242	µg/g		0.1	<0.1
Aroclor 1248	µg/g		0.1	<0.1
Aroclor 1254	µg/g		0.1	<0.1
Aroclor 1260	µg/g		0.1	<0.1
Polychlorinated Biphenyls	µg/g	0.3	0.1	<0.1
Moisture Content	%			16.6
Surrogate	**Unit**	**Acceptable Limits**		
Decachlorobiphenyl	%	60-140		104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New
4045838 Results are based on the dry weight of soil extracted.

Certified By: Jacky Takewaki

AGAT Laboratories

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AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2012-12-21 **DATE REPORTED: 2012-12-31**

		SAMPLE DESCRIPTION:		BH 2/4	BH 3/6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		12/18/2012	12/18/2012
Parameter	Unit	G / S	RDL	4045841	4045844
Benzene	µg/g	0.02	0.02	<0.02	<0.02
Toluene	µg/g	0.2	0.08	<0.08	<0.08
Ethylbenzene	µg/g	0.05	0.05	<0.05	<0.05
Xylene Mixture	µg/g	0.05	0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g		5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA
Moisture Content	%		0.1	13.7	12.1
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		98	89

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New

4045841-4045844 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Certified By: Jordy Takemoto

AGAT Laboratories

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T675486

ATTENTION TO: Andrejs Jansons

Soil Analysis

RPT Date: Dec 31, 2012			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1	4045826	< 0.8	< 0.8	0.0%	< 0.8	110%	70%	130%	108%	80%	120%	101%	70%	130%
Arsenic	1	4045826	6	6	0.0%	< 1	101%	70%	130%	109%	80%	120%	104%	70%	130%
Barium	1	4045826	90	86	4.5%	< 2	100%	70%	130%	101%	80%	120%	94%	70%	130%
Beryllium	1	4045826	1.0	1.0	0.0%	< 0.5	100%	70%	130%	99%	80%	120%	94%	70%	130%
Boron	1	4045826	5	5	0.0%	< 5	75%	70%	130%	98%	80%	120%	94%	70%	130%
Boron (Hot Water Soluble)	1	4045826	0.30	0.29	4.1%	< 0.10	124%	60%	140%	107%	70%	130%	103%	60%	140%
Cadmium	1	4045826	< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	120%	80%	120%	105%	70%	130%
Chromium	1	4045826	26	25	3.9%	< 2	99%	70%	130%	109%	80%	120%	101%	70%	130%
Cobalt	1	4045826	13.2	13.3	0.8%	< 0.5	99%	70%	130%	103%	80%	120%	98%	70%	130%
Copper	1	4045826	32	33	3.1%	< 1	100%	70%	130%	115%	80%	120%	108%	70%	130%
Lead	1	4045826	19	19	0.0%	< 1	101%	70%	130%	109%	80%	120%	103%	70%	130%
Molybdenum	1	4045826	0.5	0.5	0.0%	< 0.5	105%	70%	130%	107%	80%	120%	104%	70%	130%
Nickel	1	4045826	29	28	3.5%	< 1	99%	70%	130%	102%	80%	120%	97%	70%	130%
Selenium	1	4045826	< 0.4	< 0.4	0.0%	< 0.4	104%	70%	130%	103%	80%	120%	105%	70%	130%
Silver	1	4045826	< 0.2	< 0.2	0.0%	< 0.2	102%	70%	130%	113%	80%	120%	113%	70%	130%
Thallium	1	4045826	< 0.4	< 0.4	0.0%	< 0.4	98%	70%	130%	107%	80%	120%	96%	70%	130%
Uranium	1	4045826	0.6	0.6	0.0%	< 0.5	100%	70%	130%	102%	80%	120%	101%	70%	130%
Vanadium	1	4045826	35	34	2.9%	< 1	104%	70%	130%	106%	80%	120%	98%	70%	130%
Zinc	1	4045826	84	81	3.6%	< 5	100%	70%	130%	119%	80%	120%	105%	70%	130%
Chromium VI	1	4045826	< 0.2	< 0.2	0.0%	< 0.2	93%	70%	130%	93%	80%	120%	95%	70%	130%
Cyanide	1	4045848	< 0.040	< 0.040	0.0%	< 0.040	103%	70%	130%	102%	80%	120%	108%	70%	130%
Mercury	1	4045826	< 0.10	< 0.10	0.0%	< 0.10	109%	70%	130%	105%	80%	120%	92%	70%	130%
Electrical Conductivity (2:1)	1	4045826	0.118	0.112	5.2%	< 0.005	99%	90%	110%	NA			NA		
Sodium Adsorption Ratio	1	4045826	0.074	0.079	6.5%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1	4045843	7.76	7.77	0.1%	NA	98%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.

Certified By: Elizabeth Rotakowska

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED | **AGAT WORK ORDER: 12T675486**

PROJECT NO: 1211-E073 | **ATTENTION TO: Andrejs Jansons**

Trace Organics Analysis

RPT Date: Dec 31, 2012

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	91%	50%	140%	85%	50%	140%	63%	50%	140%
Heptachlor	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	98%	50%	140%	79%	50%	140%	58%	50%	140%
Aldrin	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	96%	50%	140%	73%	50%	140%	58%	50%	140%
Heptachlor Epoxide	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	76%	50%	140%	62%	50%	140%
Endosulfan	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	75%	50%	140%	60%	50%	140%
Chlordane	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	95%	50%	140%	73%	50%	140%	63%	50%	140%
DDE	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	97%	50%	140%	75%	50%	140%	66%	50%	140%
DDD	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	98%	50%	140%	72%	50%	140%	64%	50%	140%
DDT	1	4045847	< 0.007	< 0.007	0.0%	< 0.007	103%	50%	140%	74%	50%	140%	60%	50%	140%
Dieldrin	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	94%	50%	140%	72%	50%	140%	60%	50%	140%
Endrin	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	88%	50%	140%	73%	50%	140%	66%	50%	140%
Methoxychlor	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	83%	50%	140%	75%	50%	140%	63%	50%	140%
Hexachlorobenzene	1	4045847	< 0.005	< 0.005	0.0%	< 0.005	101%	50%	140%	78%	50%	140%	65%	50%	140%
Hexachlorobutadiene	1	4045847	< 0.01	< 0.01	0.0%	< 0.01	104%	50%	140%	82%	50%	140%	56%	50%	140%
Hexachloroethane	1	4045847	< 0.01	< 0.01	0.0%	< 0.01	88%	50%	140%	94%	50%	140%	60%	50%	140%
O. Reg. 153(511) - PCBs (Soil)															
Aroclor 1242	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	1		< 0.1	< 0.1	0.0%	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Polychlorinated Biphenyls	1		< 0.1	< 0.1	0.0%	< 0.1	107%	60%	140%	89%	60%	140%	79%	60%	140%
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	111%	50%	140%	106%	60%	130%	82%	50%	140%
Toluene	1		< 0.08	< 0.08	0.0%	< 0.08	105%	50%	140%	103%	60%	130%	79%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	106%	60%	130%	83%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	106%	50%	140%	106%	60%	130%	83%	50%	140%
F1 (C6 to C10)	1		< 5	< 5	0.0%	< 5	85%	60%	140%	84%	80%	120%	76%	60%	140%
F2 (C10 to C16)	1		< 10	< 10	0.0%	< 10	107%	60%	140%	105%	80%	120%	70%	60%	140%
F3 (C16 to C34)	1		< 50	< 50	0.0%	< 50	116%	60%	140%	112%	80%	120%	77%	60%	140%
F4 (C34 to C50)	1		< 50	< 50	0.0%	< 50	86%	60%	140%	99%	80%	120%	92%	60%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	85%	50%	140%	85%	50%	140%
Vinyl Chloride	1		< 0.02	< 0.02	0.0%	< 0.02	94%	50%	140%	87%	50%	140%	86%	50%	140%
Bromomethane	1		< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	101%	50%	140%	105%	50%	140%
Trichlorofluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	113%	50%	140%	112%	50%	140%	123%	50%	140%
Acetone	1		< 0.50	< 0.50	0.0%	< 0.50	104%	50%	140%	100%	50%	140%	88%	50%	140%
1,1-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	108%	50%	140%	126%	60%	130%	120%	50%	140%
Methylene Chloride	1		< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	121%	60%	130%	118%	50%	140%
Trans- 1,2-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	119%	60%	130%	119%	50%	140%

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T675486

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis (Continued)

RPT Date: Dec 31, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methyl tert-butyl Ether	1		< 0.05	< 0.05	0.0%	< 0.05	68%	50%	140%	91%	60%	130%	84%	50%	140%
1,1-Dichloroethane	1		< 0.02	< 0.02	0.0%	< 0.02	97%	50%	140%	127%	60%	130%	124%	50%	140%
Methyl Ethyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	90%	50%	140%	101%	50%	140%	109%	50%	140%
Cis- 1,2-Dichloroethylene	1		< 0.02	< 0.02	0.0%	< 0.02	85%	50%	140%	99%	60%	130%	104%	50%	140%
Chloroform	1		< 0.04	< 0.04	0.0%	< 0.04	110%	50%	140%	125%	60%	130%	123%	50%	140%
1,2-Dichloroethane	1		< 0.03	< 0.03	0.0%	< 0.03	104%	50%	140%	124%	60%	130%	126%	50%	140%
1,1,1-Trichloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	103%	50%	140%	107%	60%	130%	123%	50%	140%
Carbon Tetrachloride	1		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	128%	60%	130%	116%	50%	140%
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	77%	50%	140%	109%	60%	130%	114%	50%	140%
1,2-Dichloropropane	1		< 0.03	< 0.03	0.0%	< 0.03	92%	50%	140%	120%	60%	130%	129%	50%	140%
Trichloroethylene	1		< 0.03	< 0.03	0.0%	< 0.03	113%	50%	140%	119%	60%	130%	125%	50%	140%
Bromodichloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	116%	50%	140%	116%	60%	130%	111%	50%	140%
Methyl Isobutyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	73%	50%	140%	78%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	124%	50%	140%	109%	60%	130%	127%	50%	140%
Toluene	1		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	82%	60%	130%	109%	50%	140%
Dibromochloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	119%	50%	140%	116%	60%	130%	123%	50%	140%
Ethylene Dibromide	1		< 0.04	< 0.04	0.0%	< 0.04	116%	50%	140%	100%	60%	130%	109%	50%	140%
Tetrachloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	86%	50%	140%	86%	60%	130%	114%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	NA	50%	140%	107%	60%	130%	129%	50%	140%
Chlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	84%	60%	130%	109%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	80%	50%	140%	77%	60%	130%	103%	50%	140%
m & p-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	91%	50%	140%	77%	60%	130%	104%	50%	140%
Bromoform	1		< 0.05	< 0.05	0.0%	< 0.05	121%	50%	140%	112%	60%	130%	127%	50%	140%
Styrene	1		< 0.05	< 0.05	0.0%	< 0.05	84%	50%	140%	81%	60%	130%	113%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	115%	60%	130%	122%	50%	140%
o-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	85%	50%	140%	69%	60%	130%	101%	50%	140%
1,3-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	99%	60%	130%	126%	50%	140%
1,4-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	113%	60%	130%	120%	50%	140%
1,2-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	122%	50%	140%	114%	60%	130%	116%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	114%	60%	130%	105%	50%	140%
1,3-Dichloropropene	1		< 0.04	< 0.04	0.0%	< 0.04	74%	50%	140%	90%	60%	130%	98%	50%	140%
n-Hexane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	73%	60%	130%	101%	50%	140%

Certified By: Jonby Takeuchi

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Aroclor 1242	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1248	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1254	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1260	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Polychlorinated Biphenyls	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Moisture Content		MOE E3139	BALANCE
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T675486

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 12T675486**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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CLIENT NAME: SOIL ENGINEERS LIMITED
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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T799330

SOIL ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Jan 15, 2014

PAGES (INCLUDING COVER): 11

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 14T799330

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2014-01-08 **DATE REPORTED: 2014-01-15**

		SAMPLE DESCRIPTION:		BH 101/1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/8/2014
Parameter	Unit	G / S	RDL	5085311
Antimony	µg/g	1.3	0.8	<0.8
Arsenic	µg/g	18	1	5
Barium	µg/g	220	2	83
Beryllium	µg/g	2.5	0.5	0.7
Boron	µg/g	36	5	10
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.13
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	70	2	20
Cobalt	µg/g	22	0.5	12.1
Copper	µg/g	92	1	26
Lead	µg/g	120	1	10
Molybdenum	µg/g	2	0.5	<0.5
Nickel	µg/g	82	1	23
Selenium	µg/g	1.5	0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	2.5	0.5	<0.5
Vanadium	µg/g	86	1	29
Zinc	µg/g	290	5	58
Chromium VI	µg/g	0.66	0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.204
Sodium Adsorption Ratio (2:1)	N/A	5	N/A	0.104
pH, 2:1 CaCl2 Extraction	pH Units			7.90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New

5085311 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Parvathi Malemath

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AGAT WORK ORDER: 14T799330

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2014-01-08

DATE REPORTED: 2014-01-15

		SAMPLE DESCRIPTION:		BH 101/6
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/8/2014
Parameter	Unit	G / S	RDL	5085312
F1 (C6 to C10)	µg/g		5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5
F2 (C10 to C16)	µg/g	10	10	<10
F3 (C16 to C34)	µg/g	240	50	<50
F4 (C34 to C50)	µg/g	120	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	<50
Moisture Content	%		0.1	6.0
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New

5085312
Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

AGAT Laboratories

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AGAT WORK ORDER: 14T799330

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2014-01-08

DATE REPORTED: 2014-01-15

		SAMPLE DESCRIPTION:		BH 101/6
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/8/2014
Parameter	Unit	G / S	RDL	5085312
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 14T799330

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2014-01-08 **DATE REPORTED: 2014-01-15**

		SAMPLE DESCRIPTION:		BH 101/6
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/8/2014
Parameter	Unit	G / S	RDL	5085312
Styrene	ug/g	0.05	0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		111
4-Bromofluorobenzene	% Recovery	50-140		107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New

5085312 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By:

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T799330

ATTENTION TO: Andrejs Jansons

Soil Analysis

RPT Date: Jan 15, 2014			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1		< 0.8	< 0.8	0.0%	< 0.8	112%	70%	130%	83%	80%	120%	91%	70%	130%
Arsenic	1		4	4	0.0%	< 1	111%	70%	130%	99%	80%	120%	109%	70%	130%
Barium	1		72	70	2.8%	< 2	102%	70%	130%	102%	80%	120%	109%	70%	130%
Beryllium	1		0.7	0.7	0.0%	< 0.5	101%	70%	130%	116%	80%	120%	100%	70%	130%
Boron	1		9	8	11.8%	< 5	74%	70%	130%	115%	80%	120%	101%	70%	130%
Boron (Hot Water Soluble)	5088876		<0.10	<0.10	0.0%	< 0.10	93%	60%	140%	107%	70%	130%	100%	60%	140%
Cadmium	1		< 0.5	< 0.5	0.0%	< 0.5	102%	70%	130%	117%	80%	120%	103%	70%	130%
Chromium	1		22	21	4.7%	< 2	98%	70%	130%	103%	80%	120%	105%	70%	130%
Cobalt	1		10.6	10.5	0.9%	< 0.5	97%	70%	130%	103%	80%	120%	105%	70%	130%
Copper	1		24	23	4.3%	< 1	100%	70%	130%	103%	80%	120%	97%	70%	130%
Lead	1		13	13	0.0%	< 1	100%	70%	130%	99%	80%	120%	90%	70%	130%
Molybdenum	1		< 0.5	< 0.5	0.0%	< 0.5	99%	70%	130%	98%	80%	120%	104%	70%	130%
Nickel	1		22	21	4.7%	< 1	98%	70%	130%	103%	80%	120%	100%	70%	130%
Selenium	1		< 0.4	< 0.4	0.0%	< 0.4	127%	70%	130%	97%	80%	120%	106%	70%	130%
Silver	1		< 0.2	< 0.2	0.0%	< 0.2	84%	70%	130%	104%	80%	120%	103%	70%	130%
Thallium	1		< 0.4	< 0.4	0.0%	< 0.4	94%	70%	130%	106%	80%	120%	97%	70%	130%
Uranium	1		< 0.5	< 0.5	0.0%	< 0.5	98%	70%	130%	92%	80%	120%	83%	70%	130%
Vanadium	1		31	30	3.3%	< 1	99%	70%	130%	104%	80%	120%	110%	70%	130%
Zinc	1		50	49	2.0%	< 5	100%	70%	130%	102%	80%	120%	110%	70%	130%
Chromium VI	1		< 0.2	< 0.2	0.0%	< 0.2	102%	70%	130%	98%	80%	120%	98%	70%	130%
Cyanide	1		< 0.040	< 0.040	0.0%	< 0.040	93%	70%	130%	101%	80%	120%	84%	70%	130%
Mercury	1		< 0.10	< 0.10	0.0%	< 0.10	113%	70%	130%	106%	80%	120%	109%	70%	130%
Electrical Conductivity (2:1)	1		0.092	0.091	1.1%	< 0.005	107%	90%	110%	NA			NA		
Sodium Adsorption Ratio (2:1)	5085309		0.408	0.409	0.1%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1		7.84	7.82	0.3%	NA	97%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.

Certified By: Parvathi Malemalth

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 14T799330

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis

RPT Date: Jan 15, 2014			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	89%	50%	140%	122%	50%	140%
Vinyl Chloride	1	5085312	< 0.02	< 0.02	0.0%	< 0.02	123%	50%	140%	117%	50%	140%	106%	50%	140%
Bromomethane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	126%	50%	140%	121%	50%	140%	120%	50%	140%
Trichlorofluoromethane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	99%	50%	140%	111%	50%	140%
Acetone	1	5085312	< 0.50	< 0.50	0.0%	< 0.50	93%	50%	140%	95%	50%	140%	117%	50%	140%
1,1-Dichloroethylene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	110%	50%	140%	100%	60%	130%	102%	50%	140%
Methylene Chloride	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	101%	60%	130%	96%	50%	140%
Trans- 1,2-Dichloroethylene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	108%	60%	130%	91%	50%	140%
Methyl tert-butyl Ether	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	82%	50%	140%	79%	60%	130%	93%	50%	140%
1,1-Dichloroethane	1	5085312	< 0.02	< 0.02	0.0%	< 0.02	91%	50%	140%	88%	60%	130%	99%	50%	140%
Methyl Ethyl Ketone	1	5085312	< 0.50	< 0.50	0.0%	< 0.50	94%	50%	140%	79%	50%	140%	90%	50%	140%
Cis- 1,2-Dichloroethylene	1	5085312	< 0.02	< 0.02	0.0%	< 0.02	86%	50%	140%	101%	60%	130%	115%	50%	140%
Chloroform	1	5085312	< 0.04	< 0.04	0.0%	< 0.04	108%	50%	140%	84%	60%	130%	98%	50%	140%
1,2-Dichloroethane	1	5085312	< 0.03	< 0.03	0.0%	< 0.03	84%	50%	140%	74%	60%	130%	88%	50%	140%
1,1,1-Trichloroethane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	95%	60%	130%	109%	50%	140%
Carbon Tetrachloride	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	91%	50%	140%	100%	60%	130%	111%	50%	140%
Benzene	1	5085312	< 0.02	< 0.02	0.0%	< 0.02	111%	50%	140%	107%	60%	130%	118%	50%	140%
1,2-Dichloropropane	1	5085312	< 0.03	< 0.03	0.0%	< 0.03	99%	50%	140%	76%	60%	130%	86%	50%	140%
Trichloroethylene	1	5085312	< 0.03	< 0.03	0.0%	< 0.03	115%	50%	140%	92%	60%	130%	101%	50%	140%
Bromodichloromethane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	92%	60%	130%	106%	50%	140%
Methyl Isobutyl Ketone	1	5085312	< 0.50	< 0.50	0.0%	< 0.50	113%	50%	140%	97%	50%	140%	111%	50%	140%
1,1,2-Trichloroethane	1	5085312	< 0.04	< 0.04	0.0%	< 0.04	100%	50%	140%	77%	60%	130%	91%	50%	140%
Toluene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	94%	50%	140%	85%	60%	130%	92%	50%	140%
Dibromochloromethane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	96%	60%	130%	113%	50%	140%
Ethylene Dibromide	1	5085312	< 0.04	< 0.04	0.0%	< 0.04	117%	50%	140%	95%	60%	130%	110%	50%	140%
Tetrachloroethylene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	101%	60%	130%	117%	50%	140%
1,1,1,2-Tetrachloroethane	1	5085312	< 0.04	< 0.04	0.0%	< 0.04	NA	50%	140%	84%	60%	130%	99%	50%	140%
Chlorobenzene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	103%	50%	140%	105%	60%	130%	117%	50%	140%
Ethylbenzene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	129%	50%	140%	103%	60%	130%	112%	50%	140%
m & p-Xylene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	114%	60%	130%	120%	50%	140%
Bromoform	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	106%	50%	140%	97%	60%	130%	116%	50%	140%
Styrene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	86%	50%	140%	99%	60%	130%	98%	50%	140%
1,1,2,2-Tetrachloroethane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	74%	60%	130%	89%	50%	140%
o-Xylene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	101%	50%	140%	117%	60%	130%	101%	50%	140%
1,3-Dichlorobenzene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	88%	60%	130%	104%	50%	140%
1,4-Dichlorobenzene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	89%	50%	140%	106%	60%	130%	109%	50%	140%
1,2-Dichlorobenzene	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	97%	60%	130%	114%	50%	140%
1,3-Dichloropropene	1	5085312	< 0.04	< 0.04	0.0%	< 0.04	108%	50%	140%	112%	60%	130%	102%	50%	140%
n-Hexane	1	5085312	< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	116%	60%	130%	92%	50%	140%

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T799330

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis (Continued)

RPT Date: Jan 15, 2014			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	1	5085312	< 5	< 5	0.0%	< 5	80%	60%	140%	84%	80%	120%	113%	60%	140%
F2 (C10 to C16)	1		<10	<10	0.0%	< 10	100%	60%	140%	80%	80%	120%	77%	60%	140%
F3 (C16 to C34)	1		<50	<50	0.0%	< 50	101%	60%	140%	88%	80%	120%	96%	60%	140%
F4 (C34 to C50)	1		<50	<50	0.0%	< 50	95%	60%	140%	93%	80%	120%	123%	60%	140%

Certified By:

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 14T799330**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio (2:1)	INOR 1007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 14T799330**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 14T799330**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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CLIENT NAME: SOIL ENGINEERS LIMITED
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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T800598

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Jan 20, 2014

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 14T800598

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-01-13

DATE REPORTED: 2014-01-20

		SAMPLE DESCRIPTION:		BH101/1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/7/2014
Parameter	Unit	G / S	RDL	5092746
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007
DDD	µg/g	0.05	0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005
Hexachlorobenzene	µg/g	0.02	0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01
Hexachloroethane	µg/g	0.01	0.01	<0.01
Moisture Content	%		0.1	12.9
Surrogate	**Unit**	**Acceptable Limits**		
TCMX	%	50-140		52
Decachlorobiphenyl	%	60-130		66

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New

5092746 Results are based on the dry weight of the soil.
Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:

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AGAT WORK ORDER: 14T800598

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2014-01-13

DATE REPORTED: 2014-01-20

		SAMPLE DESCRIPTION:		DUP10
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/7/2014
Parameter	Unit	G / S	RDL	5092747
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05
Bromoform	ug/g	0.05	0.05	<0.05

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Certificate of Analysis

AGAT WORK ORDER: 14T800598

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2014-01-13

DATE REPORTED: 2014-01-20

		SAMPLE DESCRIPTION:		DUP10
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/7/2014
Parameter	Unit	G / S	RDL	5092747
Styrene	ug/g	0.05	0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05
Moisture Content	%		0.1	11.4
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		112
4-Bromofluorobenzene	% Recovery	50-140		112

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL) - New

5092747 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T800598

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis

RPT Date: Jan 20, 2014

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	105%	50%	140%	68%	50%	140%
Vinyl Chloride	1		< 0.02	< 0.02	0.0%	< 0.02	95%	50%	140%	99%	50%	140%	91%	50%	140%
Bromomethane	1		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	110%	50%	140%	109%	50%	140%
Trichlorofluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	99%	50%	140%	103%	50%	140%
Acetone	1		< 0.50	< 0.50	0.0%	< 0.50	85%	50%	140%	99%	50%	140%	93%	50%	140%
1,1-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	108%	60%	130%	111%	50%	140%
Methylene Chloride	1		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	107%	60%	130%	102%	50%	140%
Trans- 1,2-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	105%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	1		< 0.05	< 0.05	0.0%	< 0.05	72%	50%	140%	105%	60%	130%	93%	50%	140%
1,1-Dichloroethane	1		< 0.02	< 0.02	0.0%	< 0.02	106%	50%	140%	115%	60%	130%	96%	50%	140%
Methyl Ethyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	93%	50%	140%	88%	50%	140%	83%	50%	140%
Cis- 1,2-Dichloroethylene	1		< 0.02	< 0.02	0.0%	< 0.02	88%	50%	140%	86%	60%	130%	115%	50%	140%
Chloroform	1		< 0.04	< 0.04	0.0%	< 0.04	92%	50%	140%	117%	60%	130%	98%	50%	140%
1,2-Dichloroethane	1		< 0.03	< 0.03	0.0%	< 0.03	80%	50%	140%	102%	60%	130%	92%	50%	140%
1,1,1-Trichloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	105%	60%	130%	115%	50%	140%
Carbon Tetrachloride	1		< 0.05	< 0.05	0.0%	< 0.05	110%	50%	140%	96%	60%	130%	100%	50%	140%
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	92%	50%	140%	88%	60%	130%	120%	50%	140%
1,2-Dichloropropane	1		< 0.03	< 0.03	0.0%	< 0.03	75%	50%	140%	100%	60%	130%	88%	50%	140%
Trichloroethylene	1		< 0.03	< 0.03	0.0%	< 0.03	97%	50%	140%	96%	60%	130%	109%	50%	140%
Bromodichloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	88%	60%	130%	105%	50%	140%
Methyl Isobutyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	101%	50%	140%	119%	50%	140%	99%	50%	140%
1,1,2-Trichloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	73%	50%	140%	110%	60%	130%	88%	50%	140%
Toluene	1		< 0.05	< 0.05	0.0%	< 0.05	69%	50%	140%	100%	60%	130%	88%	50%	140%
Dibromochloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	91%	50%	140%	95%	60%	130%	106%	50%	140%
Ethylene Dibromide	1		< 0.04	< 0.04	0.0%	< 0.04	82%	50%	140%	92%	60%	130%	111%	50%	140%
Tetrachloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	94%	50%	140%	99%	60%	130%	118%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	NA	50%	140%	117%	60%	130%	93%	50%	140%
Chlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	82%	50%	140%	87%	60%	130%	116%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	73%	50%	140%	106%	60%	130%	114%	50%	140%
m & p-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	102%	60%	130%	127%	50%	140%
Bromoform	1		< 0.05	< 0.05	0.0%	< 0.05	84%	50%	140%	100%	60%	130%	109%	50%	140%
Styrene	1		< 0.05	< 0.05	0.0%	< 0.05	77%	50%	140%	111%	60%	130%	112%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	101%	60%	130%	86%	50%	140%
o-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	95%	60%	130%	96%	50%	140%
1,3-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	87%	50%	140%	117%	60%	130%	116%	50%	140%
1,4-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	83%	50%	140%	112%	60%	130%	118%	50%	140%
1,2-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	87%	50%	140%	103%	60%	130%	92%	50%	140%
1,3-Dichloropropene	1		< 0.04	< 0.04	0.0%	< 0.04	102%	50%	140%	97%	60%	130%	113%	50%	140%
n-Hexane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	92%	60%	130%	117%	50%	140%

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CLIENT NAME: SOIL ENGINEERS LIMITED | **AGAT WORK ORDER: 14T800598**

PROJECT NO: 1211-E073 | **ATTENTION TO: Andrejs Jansons**

Trace Organics Analysis (Continued)

RPT Date: Jan 20, 2014			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1		< 0.005	< 0.005	0.0%	< 0.005	77%	50%	140%	93%	50%	140%	86%	50%	140%
Heptachlor	1		< 0.005	< 0.005	0.0%	< 0.005	92%	50%	140%	83%	50%	140%	96%	50%	140%
Aldrin	1		< 0.005	< 0.005	0.0%	< 0.005	114%	50%	140%	70%	50%	140%	68%	50%	140%
Heptachlor Epoxide	1		< 0.005	< 0.005	0.0%	< 0.005	115%	50%	140%	74%	50%	140%	72%	50%	140%
Endosulfan	1		< 0.005	< 0.005	0.0%	< 0.005	113%	50%	140%	71%	50%	140%	70%	50%	140%
Chlordane	1		< 0.007	< 0.007	0.0%	< 0.007	113%	50%	140%	72%	50%	140%	70%	50%	140%
DDE	1		< 0.007	< 0.007	0.0%	< 0.007	117%	50%	140%	72%	50%	140%	72%	50%	140%
DDD	1		< 0.007	< 0.007	0.0%	< 0.007	109%	50%	140%	62%	50%	140%	66%	50%	140%
DDT	1		< 0.007	< 0.007	0.0%	< 0.007	104%	50%	140%	59%	50%	140%	60%	50%	140%
Dieldrin	1		< 0.005	< 0.005	0.0%	< 0.005	112%	50%	140%	70%	50%	140%	68%	50%	140%
Endrin	1		< 0.005	< 0.005	0.0%	< 0.005	115%	50%	140%	74%	50%	140%	74%	50%	140%
Methoxychlor	1		< 0.005	< 0.005	0.0%	< 0.005	110%	50%	140%	72%	50%	140%	72%	50%	140%
Hexachlorobenzene	1		< 0.005	< 0.005	0.0%	< 0.005	115%	50%	140%	72%	50%	140%	68%	50%	140%
Hexachlorobutadiene	1		< 0.01	< 0.01	0.0%	< 0.01	105%	50%	140%	90%	50%	140%	54%	50%	140%
Hexachloroethane	1		< 0.01	< 0.01	0.0%	< 0.01	105%	50%	140%	94%	50%	140%	50%	50%	140%

Certified By:

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 14T800598**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED **AGAT WORK ORDER: 14T800598**

PROJECT NO: 1211-E073 **ATTENTION TO: Andrejs Jansons**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Moisture Content	VOL-91-5002	MOE E3139	BALANCE

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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 'C'

CERTIFICATES OF ANALYSIS
(GROUNDWATER SAMPLES AND QA/QC SAMPLES)

REFERNCE NO. 1211-E073

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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T799865

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Jan 17, 2014

PAGES (INCLUDING COVER): 10

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW2	MW3
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050980	4050981
F1 (C6 to C10)	µg/L		25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		70	63

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL-GW) - NEW

4050980-4050981 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW2	MW3
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050980	4050981
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20
Benzene	µg/L	5	0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20
Toluene	µg/L	22	0.20	<0.20	<0.20
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20
Bromoform	µg/L	25	0.10	<0.10	<0.10

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Certificate of Analysis

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW2	MW3
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050980	4050981
Styrene	µg/L	5.4	0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30
Xylene Mixture	µg/L	300	0.20	<0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	50-140		125	107
4-Bromofluorobenzene	% Recovery	50-140		93	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL-GW) - NEW

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2012-12-28

DATE REPORTED: 2013-01-04

		SAMPLE DESCRIPTION:		MW2	MW3
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		12/28/2012	12/28/2012
Parameter	Unit	G / S	RDL	4050980	4050981
Antimony	µg/L	6	0.5	<0.5	<0.5
Arsenic	µg/L	25	1.0	<1.0	<1.0
Barium	µg/L	1000	2.0	108	103
Beryllium	µg/L	4	0.5	<0.5	<0.5
Boron	µg/L	5000	10.0	104	76.0
Cadmium	µg/L	2.1	0.2	0.2	<0.2
Chromium	µg/L	50	2.0	5.0	5.6
Cobalt	µg/L	3.8	0.5	1.3	0.7
Copper	µg/L	69	1.0	1.6	1.5
Lead	µg/L	10	0.5	<0.5	<0.5
Molybdenum	µg/L	70	0.5	29.7	8.1
Nickel	µg/L	100	1.0	8.4	8.2
Selenium	µg/L	10	1.0	2.4	1.9
Silver	µg/L	1.2	0.2	0.4	0.2
Thallium	µg/L	2	0.3	<0.3	<0.3
Uranium	µg/L	20	0.5	2.2	3.5
Vanadium	µg/L	6.2	0.4	1.4	2.0
Zinc	µg/L	890	5.0	10.3	62.0
Mercury	µg/L	0.29	0.02	<0.02	<0.02
Chromium VI	µg/L	25	5	<5	<5
Cyanide	µg/L	52	2	<2	<2
Sodium	µg/L	490000	500	65500	89700
Chloride	µg/L	790000	100	192000	189000
Nitrate as N	µg/L		50	<50	<50
Nitrite as N	µg/L		50	126	<50
Electrical Conductivity	uS/cm		2	1370	1290
pH	pH Units		NA	7.58	7.66

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL-GW) - NEW

Certified By: Elizabeth Rotakowska

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CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis

RPT Date: Jan 04, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	1		< 0.20	< 0.20	0.0%	< 0.20	108%	50%	140%	93%	50%	140%	68%	50%	140%
Vinyl Chloride	1		< 0.17	< 0.17	0.0%	< 0.17	122%	50%	140%	75%	50%	140%	73%	50%	140%
Bromomethane	1		< 0.20	< 0.20	0.0%	< 0.20	117%	50%	140%	100%	50%	140%	112%	50%	140%
Trichlorofluoromethane	1		< 0.40	< 0.40	0.0%	< 0.40	116%	50%	140%	107%	50%	140%	91%	50%	140%
Acetone	1		< 1.0	< 1.0	0.0%	< 1.0	126%	50%	140%	128%	50%	140%	122%	50%	140%
1,1-Dichloroethylene	1		< 0.30	< 0.30	0.0%	< 0.30	124%	50%	140%	127%	60%	130%	126%	50%	140%
Methylene Chloride	1		< 0.30	< 0.30	0.0%	< 0.30	120%	50%	140%	124%	60%	130%	123%	50%	140%
trans- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	122%	50%	140%	119%	60%	130%	127%	50%	140%
Methyl tert-butyl ether	1		< 0.20	< 0.20	0.0%	< 0.20	88%	50%	140%	112%	60%	130%	103%	50%	140%
1,1-Dichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	126%	50%	140%	129%	60%	130%	130%	50%	140%
Methyl Ethyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	119%	50%	140%	112%	50%	140%	124%	50%	140%
cis- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	100%	50%	140%	112%	60%	130%	130%	50%	140%
Chloroform	1		< 0.20	< 0.20	0.0%	< 0.20	127%	50%	140%	122%	60%	130%	125%	50%	140%
1,2-Dichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	127%	50%	140%	121%	60%	130%	113%	50%	140%
1,1,1-Trichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	124%	50%	140%	91%	60%	130%	123%	50%	140%
Carbon Tetrachloride	1		< 0.20	< 0.20	0.0%	< 0.20	113%	50%	140%	126%	60%	130%	122%	50%	140%
Benzene	1		< 0.20	< 0.20	0.0%	< 0.20	99%	50%	140%	111%	60%	130%	114%	50%	140%
1,2-Dichloropropane	1		< 0.20	< 0.20	0.0%	< 0.20	117%	50%	140%	112%	60%	130%	120%	50%	140%
Trichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	119%	60%	130%	120%	50%	140%
Bromodichloromethane	1		< 0.20	< 0.20	0.0%	< 0.20	130%	50%	140%	116%	60%	130%	128%	50%	140%
Methyl Isobutyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	97%	50%	140%	93%	50%	140%	83%	50%	140%
1,1,2-Trichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	116%	60%	130%	115%	50%	140%
Toluene	1		< 0.20	< 0.20	0.0%	< 0.20	94%	50%	140%	83%	60%	130%	84%	50%	140%
Dibromochloromethane	1		< 0.10	< 0.10	0.0%	< 0.10	125%	50%	140%	127%	60%	130%	128%	50%	140%
Ethylene Dibromide	1		< 0.10	< 0.10	0.0%	< 0.10	123%	50%	140%	109%	60%	130%	112%	50%	140%
Tetrachloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	86%	50%	140%	79%	60%	130%	82%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	115%	60%	130%	121%	50%	140%
Chlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	85%	50%	140%	81%	60%	130%	77%	50%	140%
Ethylbenzene	1		< 0.10	< 0.10	0.0%	< 0.10	83%	50%	140%	79%	60%	130%	130%	50%	140%
m & p-Xylene	1		< 0.20	< 0.20	0.0%	< 0.20	87%	50%	140%	79%	60%	130%	78%	50%	140%
Bromoform	1		< 0.10	< 0.10	0.0%	< 0.10	122%	50%	140%	119%	60%	130%	130%	50%	140%
Styrene	1		< 0.10	< 0.10	0.0%	< 0.10	90%	50%	140%	86%	60%	130%	78%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	129%	60%	130%	126%	50%	140%
o-Xylene	1		< 0.10	< 0.10	0.0%	< 0.10	89%	50%	140%	80%	60%	130%	81%	50%	140%
1,3-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	111%	50%	140%	98%	60%	130%	97%	50%	140%
1,4-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	121%	50%	140%	106%	60%	130%	101%	50%	140%
1,2-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	125%	50%	140%	122%	60%	130%	111%	50%	140%
1,3-Dichloropropene	1		< 0.30	< 0.30	0.0%	< 0.30	89%	50%	140%	102%	60%	130%	104%	50%	140%
Xylene Mixture	1		< 0.20	< 0.20	0.0%	< 0.20	88%	50%	140%	80%	60%	130%	80%	50%	140%

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T676437

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis (Continued)

RPT Date: Jan 04, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
n-Hexane	1		< 0.20	< 0.20	0.0%	< 0.20	NA	50%	140%	91%	60%	130%	84%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 to C10)	1		< 25	< 25	0.0%	< 25	94%	60%	140%	88%	60%	140%	96%	60%	140%
F2 (C10 to C16)	1	4051006	< 100	< 100	0.0%	< 100	103%	60%	140%	96%	60%	140%	60%	60%	140%
F3 (C16 to C34)	1	4051006	< 100	< 100	0.0%	< 100	103%	60%	140%	101%	60%	140%	77%	60%	140%
F4 (C34 to C50)	1	4051006	< 100	< 100	0.0%	< 100	80%	60%	140%	80%	60%	140%	100%	60%	140%
O. Reg. 153(511) - OC Pesticides (Water)															
Gamma-Hexachlorocyclohexane	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	74%	50%	140%	75%	50%	140%
Heptachlor	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	94%	50%	140%	85%	50%	140%	88%	50%	140%
Aldrin	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	95%	50%	140%	70%	50%	140%	77%	50%	140%
Heptachlor Epoxide	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	71%	50%	140%	77%	50%	140%
Endosulfan	1	4051021	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	80%	50%	140%	75%	50%	140%
Chlordane	1	4051021	< 0.04	< 0.04	0.0%	< 0.04	97%	50%	140%	72%	50%	140%	75%	50%	140%
DDE	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	73%	50%	140%	75%	50%	140%
DDD	1	4051021	< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	75%	50%	140%	80%	50%	140%
DDT	1	4051021	< 0.04	< 0.04	0.0%	< 0.04	97%	50%	140%	68%	50%	140%	75%	50%	140%
Dieldrin	1	4051021	< 0.02	< 0.02	0.0%	< 0.02	99%	50%	140%	80%	50%	140%	85%	50%	140%
Endrin	1	4051021	< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	85%	50%	140%	81%	50%	140%
Methoxychlor	1	4051021	< 0.04	< 0.04	0.0%	< 0.04	93%	50%	140%	73%	50%	140%	80%	50%	140%
Hexachlorobenzene	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	105%	50%	140%	77%	50%	140%	74%	50%	140%
Hexachlorobutadiene	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	103%	50%	140%	102%	50%	140%	87%	50%	140%
Hexachloroethane	1	4051021	< 0.01	< 0.01	0.0%	< 0.01	93%	50%	140%	80%	50%	140%	75%	50%	140%

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

Water Analysis

RPT Date: Jan 04, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	1	4050980	< 0.5	< 0.5	0.0%	< 0.5	102%	70%	130%	97%	80%	120%	103%	70%	130%
Arsenic	1	4050980	< 1.0	1.0	NA	< 1.0	99%	70%	130%	100%	80%	120%	110%	70%	130%
Barium	1	4050980	108	105	2.8%	< 2.0	99%	70%	130%	96%	80%	120%	105%	70%	130%
Beryllium	1	4050980	< 0.5	< 0.5	0.0%	< 0.5	101%	70%	130%	96%	80%	120%	103%	70%	130%
Boron	1	4050980	104	111	6.5%	< 10.0	100%	70%	130%	95%	80%	120%	100%	70%	130%
Cadmium	1	4050980	0.2	0.3	NA	< 0.2	97%	70%	130%	98%	80%	120%	118%	70%	130%
Chromium	1	4050980	5.0	4.4	12.8%	< 2.0	102%	70%	130%	102%	80%	120%	89%	70%	130%
Cobalt	1	4050980	1.3	1.3	0.0%	< 0.5	105%	70%	130%	104%	80%	120%	100%	70%	130%
Copper	1	4050980	1.6	1.9	17.1%	< 1.0	93%	70%	130%	94%	80%	120%	90%	70%	130%
Lead	1	4050980	< 0.5	< 0.5	0.0%	< 0.5	101%	70%	130%	107%	80%	120%	98%	70%	130%
Molybdenum	1	4050980	29.7	29.9	0.7%	< 0.5	98%	70%	130%	92%	80%	120%	101%	70%	130%
Nickel	1	4050980	8.4	8.4	0.0%	< 1.0	103%	70%	130%	105%	80%	120%	99%	70%	130%
Selenium	1	4050980	2.8	2.9	3.5%	< 1.0	98%	70%	130%	100%	80%	120%	108%	70%	130%
Silver	1	4050980	0.4	0.3	NA	< 0.2	101%	70%	130%	117%	80%	120%	112%	70%	130%
Thallium	1	4050980	< 0.3	< 0.3	0.0%	< 0.3	104%	70%	130%	110%	80%	120%	100%	70%	130%
Uranium	1	4050980	2.2	2.2	0.0%	< 0.5	101%	70%	130%	101%	80%	120%	98%	70%	130%
Vanadium	1	4050980	1.4	1.7	19.4%	< 0.4	100%	70%	130%	99%	80%	120%	100%	70%	130%
Zinc	1	4050980	10.3	10.1	2.0%	< 5.0	98%	70%	130%	101%	80%	120%	108%	70%	130%
Mercury	1	4050980	<0.02	<0.02	0.0%	< 0.02	97%	70%	130%	93%	80%	120%	99%	70%	130%
Chromium VI	1		< 5	< 5	0.0%	< 5	101%	70%	130%	106%	80%	120%	103%	70%	130%
Cyanide	1	4050980	< 2	< 2	0.0%	< 2	98%	70%	130%	97%	80%	120%	81%	70%	130%
Sodium	1	4051021	12100	11900	1.7%	< 500	100%	70%	130%	99%	80%	120%	97%	70%	130%
Chloride	1	4051036	31700	32300	1.9%	< 100	94%	70%	130%	98%	70%	130%	102%	70%	130%
Nitrate as N	1	4051036	3390	3280	3.3%	< 50	92%	70%	130%	106%	70%	130%	109%	70%	130%
Nitrite as N	1	4051036	< 50	< 50	0.0%	< 50	NA	70%	130%	108%	70%	130%	117%	70%	130%
Electrical Conductivity	1	4050980	1370	1370	0.0%	< 2	105%	90%	110%	NA			NA		
pH	1	4050980	7.58	7.68	1.3%	NA	100%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.
RPD Qualifier (As, Cd, Ag): As the average value for the sample and a duplicate is less than 5X RDL, lab's RPD acceptance criteria is not applicable.

Certified By: Elizabeth Rolakowska

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Time Markers

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050980	MW2	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	29-DEC-2012	29-DEC-2012	DW
Arsenic	29-DEC-2012	29-DEC-2012	DW
Barium	29-DEC-2012	29-DEC-2012	DW
Beryllium	29-DEC-2012	29-DEC-2012	DW
Boron	29-DEC-2012	29-DEC-2012	DW
Cadmium	29-DEC-2012	29-DEC-2012	DW
Chromium	29-DEC-2012	29-DEC-2012	DW
Cobalt	29-DEC-2012	29-DEC-2012	DW
Copper	29-DEC-2012	29-DEC-2012	DW
Lead	29-DEC-2012	29-DEC-2012	DW
Molybdenum	29-DEC-2012	29-DEC-2012	DW
Nickel	29-DEC-2012	29-DEC-2012	DW
Selenium	29-DEC-2012	29-DEC-2012	DW
Silver	29-DEC-2012	29-DEC-2012	DW
Thallium	29-DEC-2012	29-DEC-2012	DW
Uranium	29-DEC-2012	29-DEC-2012	DW
Vanadium	29-DEC-2012	29-DEC-2012	DW
Zinc	29-DEC-2012	29-DEC-2012	DW
Mercury	31-DEC-2012	31-DEC-2012	DL
Chromium VI	02-JAN-2013	02-JAN-2013	YY
Cyanide	02-JAN-2013	02-JAN-2013	PP
Sodium	31-DEC-2012	31-DEC-2012	DP
Chloride	30-DEC-2012	31-DEC-2012	MM
Nitrate as N	30-DEC-2012	31-DEC-2012	MM
Nitrite as N	01-JAN-2013	02-JAN-2013	MM
Electrical Conductivity	31-DEC-2012	31-DEC-2012	PB
pH	31-DEC-2012	31-DEC-2012	PB

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10)	31-DEC-2012	31-DEC-2012	BP
F1 (C6 to C10) minus BTEX	31-DEC-2012	31-DEC-2012	BP
F2 (C10 to C16)	03-JAN-2013	03-JAN-2013	ZP
F3 (C16 to C34)	03-JAN-2013	03-JAN-2013	ZP
F4 (C34 to C50)	03-JAN-2013	03-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Terphenyl	03-JAN-2013	03-JAN-2013	ZP

O. Reg. 153(511) - VOCs (Water)

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ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050980	MW2	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	04-JAN-2012	04-JAN-2012	GY
Vinyl Chloride	04-JAN-2012	04-JAN-2012	GY
Bromomethane	04-JAN-2012	04-JAN-2012	GY
Trichlorofluoromethane	04-JAN-2012	04-JAN-2012	GY
Acetone	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methylene Chloride	04-JAN-2012	04-JAN-2012	GY
trans- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methyl tert-butyl ether	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
Methyl Ethyl Ketone	04-JAN-2012	04-JAN-2012	GY
cis- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Chloroform	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
1,1,1-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Carbon Tetrachloride	04-JAN-2012	04-JAN-2012	GY
Benzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloropropane	04-JAN-2012	04-JAN-2012	GY
Trichloroethylene	04-JAN-2012	04-JAN-2012	GY
Bromodichloromethane	04-JAN-2012	04-JAN-2012	GY
Methyl Isobutyl Ketone	04-JAN-2012	04-JAN-2012	GY
1,1,2-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Toluene	04-JAN-2012	04-JAN-2012	GY
Dibromochloromethane	04-JAN-2012	04-JAN-2012	GY
Ethylene Dibromide	04-JAN-2012	04-JAN-2012	GY
Tetrachloroethylene	04-JAN-2012	04-JAN-2012	GY
1,1,1,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
Chlorobenzene	04-JAN-2012	04-JAN-2012	GY
Ethylbenzene	04-JAN-2012	04-JAN-2012	GY
m & p-Xylene	04-JAN-2012	04-JAN-2012	GY
Bromoform	04-JAN-2012	04-JAN-2012	GY
Styrene	04-JAN-2012	04-JAN-2012	GY
1,1,2,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
o-Xylene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,4-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichloropropene	04-JAN-2012	04-JAN-2012	GY
Xylene Mixture	04-JAN-2012	04-JAN-2012	GY

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050980	MW2	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
n-Hexane	04-JAN-2012	04-JAN-2012	GY
Toluene-d8	04-JAN-2012	04-JAN-2012	GY
4-Bromofluorobenzene	04-JAN-2012	04-JAN-2012	GY

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050981	MW3	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	29-DEC-2012	29-DEC-2012	DW
Arsenic	29-DEC-2012	29-DEC-2012	DW
Barium	29-DEC-2012	29-DEC-2012	DW
Beryllium	29-DEC-2012	29-DEC-2012	DW
Boron	29-DEC-2012	29-DEC-2012	DW
Cadmium	29-DEC-2012	29-DEC-2012	DW
Chromium	29-DEC-2012	29-DEC-2012	DW
Cobalt	29-DEC-2012	29-DEC-2012	DW
Copper	29-DEC-2012	29-DEC-2012	DW
Lead	29-DEC-2012	29-DEC-2012	DW
Molybdenum	29-DEC-2012	29-DEC-2012	DW
Nickel	29-DEC-2012	29-DEC-2012	DW
Selenium	29-DEC-2012	29-DEC-2012	DW
Silver	29-DEC-2012	29-DEC-2012	DW
Thallium	29-DEC-2012	29-DEC-2012	DW
Uranium	29-DEC-2012	29-DEC-2012	DW
Vanadium	29-DEC-2012	29-DEC-2012	DW
Zinc	29-DEC-2012	29-DEC-2012	DW
Mercury	31-DEC-2012	31-DEC-2012	DL
Chromium VI	02-JAN-2013	02-JAN-2013	YY
Cyanide	02-JAN-2013	02-JAN-2013	PP
Sodium	31-DEC-2012	31-DEC-2012	DP
Chloride	30-DEC-2012	31-DEC-2012	MM
Nitrate as N	30-DEC-2012	31-DEC-2012	MM
Nitrite as N	30-DEC-2012	31-DEC-2012	MM
Electrical Conductivity	31-DEC-2012	31-DEC-2012	PB
pH	31-DEC-2012	31-DEC-2012	PB

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10)	31-DEC-2012	31-DEC-2012	BP

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ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050981	MW3	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10) minus BTEX	31-DEC-2012	31-DEC-2012	BP
F2 (C10 to C16)	03-JAN-2013	03-JAN-2013	ZP
F3 (C16 to C34)	03-JAN-2013	03-JAN-2013	ZP
F4 (C34 to C50)	03-JAN-2013	03-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Terphenyl	03-JAN-2013	03-JAN-2013	ZP

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	04-JAN-2012	04-JAN-2012	GY
Vinyl Chloride	04-JAN-2012	04-JAN-2012	GY
Bromomethane	04-JAN-2012	04-JAN-2012	GY
Trichlorofluoromethane	04-JAN-2012	04-JAN-2012	GY
Acetone	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methylene Chloride	04-JAN-2012	04-JAN-2012	GY
trans- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methyl tert-butyl ether	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
Methyl Ethyl Ketone	04-JAN-2012	04-JAN-2012	GY
cis- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Chloroform	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
1,1,1-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Carbon Tetrachloride	04-JAN-2012	04-JAN-2012	GY
Benzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloropropane	04-JAN-2012	04-JAN-2012	GY
Trichloroethylene	04-JAN-2012	04-JAN-2012	GY
Bromodichloromethane	04-JAN-2012	04-JAN-2012	GY
Methyl Isobutyl Ketone	04-JAN-2012	04-JAN-2012	GY
1,1,2-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Toluene	04-JAN-2012	04-JAN-2012	GY
Dibromochloromethane	04-JAN-2012	04-JAN-2012	GY
Ethylene Dibromide	04-JAN-2012	04-JAN-2012	GY
Tetrachloroethylene	04-JAN-2012	04-JAN-2012	GY
1,1,1,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
Chlorobenzene	04-JAN-2012	04-JAN-2012	GY
Ethylbenzene	04-JAN-2012	04-JAN-2012	GY
m & p-Xylene	04-JAN-2012	04-JAN-2012	GY

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ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050981	MW3	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Bromoform	04-JAN-2012	04-JAN-2012	GY
Styrene	04-JAN-2012	04-JAN-2012	GY
1,1,2,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
o-Xylene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,4-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichloropropene	04-JAN-2012	04-JAN-2012	GY
Xylene Mixture	04-JAN-2012	04-JAN-2012	GY
n-Hexane	04-JAN-2012	04-JAN-2012	GY
Toluene-d8	04-JAN-2012	04-JAN-2012	GY
4-Bromofluorobenzene	04-JAN-2012	04-JAN-2012	GY

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050993	MW4	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	29-DEC-2012	29-DEC-2012	DW
Arsenic	29-DEC-2012	29-DEC-2012	DW
Barium	29-DEC-2012	29-DEC-2012	DW
Beryllium	29-DEC-2012	29-DEC-2012	DW
Boron	29-DEC-2012	29-DEC-2012	DW
Cadmium	29-DEC-2012	29-DEC-2012	DW
Chromium	29-DEC-2012	29-DEC-2012	DW
Cobalt	29-DEC-2012	29-DEC-2012	DW
Copper	29-DEC-2012	29-DEC-2012	DW
Lead	29-DEC-2012	29-DEC-2012	DW
Molybdenum	29-DEC-2012	29-DEC-2012	DW
Nickel	29-DEC-2012	29-DEC-2012	DW
Selenium	29-DEC-2012	29-DEC-2012	DW
Silver	29-DEC-2012	29-DEC-2012	DW
Thallium	29-DEC-2012	29-DEC-2012	DW
Uranium	29-DEC-2012	29-DEC-2012	DW
Vanadium	29-DEC-2012	29-DEC-2012	DW
Zinc	29-DEC-2012	29-DEC-2012	DW
Mercury	31-DEC-2012	31-DEC-2012	DL
Chromium VI	02-JAN-2013	02-JAN-2013	YY
Cyanide	02-JAN-2013	02-JAN-2013	PP
Sodium	31-DEC-2012	31-DEC-2012	DP

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Time Markers

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050993	MW4	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Chloride	01-JAN-2013	02-JAN-2013	MM
Nitrate as N	01-JAN-2013	02-JAN-2013	MM
Nitrite as N	30-DEC-2012	31-DEC-2012	MM
Electrical Conductivity	31-DEC-2012	31-DEC-2012	PB
pH	31-DEC-2012	31-DEC-2012	PB

O. Reg. 153(511) - OC Pesticides (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Gamma-Hexachlorocyclohexane	31-DEC-2012	01-JAN-2013	MA
Heptachlor	31-DEC-2012	01-JAN-2013	MA
Aldrin	31-DEC-2012	01-JAN-2013	MA
Heptachlor Epoxide	31-DEC-2012	01-JAN-2013	MA
Endosulfan	31-DEC-2012	01-JAN-2013	MA
Chlordane	31-DEC-2012	01-JAN-2013	MA
DDE	31-DEC-2012	01-JAN-2013	MA
DDD	31-DEC-2012	01-JAN-2013	MA
DDT	31-DEC-2012	01-JAN-2013	MA
Dieldrin	31-DEC-2012	01-JAN-2013	MA
Endrin	31-DEC-2012	01-JAN-2013	MA
Methoxychlor	31-DEC-2012	01-JAN-2013	MA
Hexachlorobenzene	31-DEC-2012	01-JAN-2013	MA
Hexachlorobutadiene	31-DEC-2012	01-JAN-2013	MA
Hexachloroethane	31-DEC-2012	01-JAN-2013	MA
TCMX	31-DEC-2012	01-JAN-2013	MA
Decachlorobiphenyl	31-DEC-2012	01-JAN-2013	MA

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10)	31-DEC-2012	31-DEC-2012	BP
F1 (C6 to C10) minus BTEX	31-DEC-2012	31-DEC-2012	BP
F2 (C10 to C16)	03-JAN-2013	03-JAN-2013	ZP
F3 (C16 to C34)	03-JAN-2013	03-JAN-2013	ZP
F4 (C34 to C50)	03-JAN-2013	03-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Terphenyl	03-JAN-2013	03-JAN-2013	ZP

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	04-JAN-2012	04-JAN-2012	GY

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Time Markers

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050993	MW4	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Vinyl Chloride	04-JAN-2012	04-JAN-2012	GY
Bromomethane	04-JAN-2012	04-JAN-2012	GY
Trichlorofluoromethane	04-JAN-2012	04-JAN-2012	GY
Acetone	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methylene Chloride	04-JAN-2012	04-JAN-2012	GY
trans- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methyl tert-butyl ether	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
Methyl Ethyl Ketone	04-JAN-2012	04-JAN-2012	GY
cis- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Chloroform	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
1,1,1-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Carbon Tetrachloride	04-JAN-2012	04-JAN-2012	GY
Benzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloropropane	04-JAN-2012	04-JAN-2012	GY
Trichloroethylene	04-JAN-2012	04-JAN-2012	GY
Bromodichloromethane	04-JAN-2012	04-JAN-2012	GY
Methyl Isobutyl Ketone	04-JAN-2012	04-JAN-2012	GY
1,1,2-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Toluene	04-JAN-2012	04-JAN-2012	GY
Dibromochloromethane	04-JAN-2012	04-JAN-2012	GY
Ethylene Dibromide	04-JAN-2012	04-JAN-2012	GY
Tetrachloroethylene	04-JAN-2012	04-JAN-2012	GY
1,1,1,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
Chlorobenzene	04-JAN-2012	04-JAN-2012	GY
Ethylbenzene	04-JAN-2012	04-JAN-2012	GY
m & p-Xylene	04-JAN-2012	04-JAN-2012	GY
Bromoform	04-JAN-2012	04-JAN-2012	GY
Styrene	04-JAN-2012	04-JAN-2012	GY
1,1,2,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
o-Xylene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,4-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichloropropene	04-JAN-2012	04-JAN-2012	GY
Xylene Mixture	04-JAN-2012	04-JAN-2012	GY
n-Hexane	04-JAN-2012	04-JAN-2012	GY

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ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4050993	MW4	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Toluene-d8	04-JAN-2012	04-JAN-2012	GY
4-Bromofluorobenzene	04-JAN-2012	04-JAN-2012	GY

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051006	MW5	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	29-DEC-2012	29-DEC-2012	DW
Arsenic	29-DEC-2012	29-DEC-2012	DW
Barium	29-DEC-2012	29-DEC-2012	DW
Beryllium	29-DEC-2012	29-DEC-2012	DW
Boron	29-DEC-2012	29-DEC-2012	DW
Cadmium	29-DEC-2012	29-DEC-2012	DW
Chromium	29-DEC-2012	29-DEC-2012	DW
Cobalt	29-DEC-2012	29-DEC-2012	DW
Copper	29-DEC-2012	29-DEC-2012	DW
Lead	29-DEC-2012	29-DEC-2012	DW
Molybdenum	29-DEC-2012	29-DEC-2012	DW
Nickel	29-DEC-2012	29-DEC-2012	DW
Selenium	29-DEC-2012	29-DEC-2012	DW
Silver	29-DEC-2012	29-DEC-2012	DW
Thallium	29-DEC-2012	29-DEC-2012	DW
Uranium	29-DEC-2012	29-DEC-2012	DW
Vanadium	29-DEC-2012	29-DEC-2012	DW
Zinc	29-DEC-2012	29-DEC-2012	DW
Mercury	31-DEC-2012	31-DEC-2012	DL
Chromium VI	02-JAN-2013	02-JAN-2013	YY
Cyanide	02-JAN-2013	02-JAN-2013	PP
Sodium	31-DEC-2012	31-DEC-2012	DP
Chloride	01-JAN-2013	02-JAN-2013	MM
Nitrate as N	01-JAN-2013	02-JAN-2013	MM
Nitrite as N	01-JAN-2013	02-JAN-2013	MM
Electrical Conductivity	31-DEC-2012	31-DEC-2012	PB
pH	31-DEC-2012	31-DEC-2012	PB

O. Reg. 153(511) - OC Pesticides (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Gamma-Hexachlorocyclohexane	31-DEC-2012	01-JAN-2013	MA
Heptachlor	31-DEC-2012	01-JAN-2013	MA

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ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051006	MW5	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - OC Pesticides (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Aldrin	31-DEC-2012	01-JAN-2013	MA
Heptachlor Epoxide	31-DEC-2012	01-JAN-2013	MA
Endosulfan	31-DEC-2012	01-JAN-2013	MA
Chlordane	31-DEC-2012	01-JAN-2013	MA
DDE	31-DEC-2012	01-JAN-2013	MA
DDD	31-DEC-2012	01-JAN-2013	MA
DDT	31-DEC-2012	01-JAN-2013	MA
Dieldrin	31-DEC-2012	01-JAN-2013	MA
Endrin	31-DEC-2012	01-JAN-2013	MA
Methoxychlor	31-DEC-2012	01-JAN-2013	MA
Hexachlorobenzene	31-DEC-2012	01-JAN-2013	MA
Hexachlorobutadiene	31-DEC-2012	01-JAN-2013	MA
Hexachloroethane	31-DEC-2012	01-JAN-2013	MA
TCMX	31-DEC-2012	01-JAN-2013	MA
Decachlorobiphenyl	31-DEC-2012	01-JAN-2013	MA

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10)	31-DEC-2012	31-DEC-2012	BP
F1 (C6 to C10) minus BTEX	31-DEC-2012	31-DEC-2012	BP
F2 (C10 to C16)	03-JAN-2013	03-JAN-2013	ZP
F3 (C16 to C34)	03-JAN-2013	03-JAN-2013	ZP
F4 (C34 to C50)	03-JAN-2013	03-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Terphenyl	03-JAN-2013	03-JAN-2013	ZP

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	04-JAN-2012	04-JAN-2012	GY
Vinyl Chloride	04-JAN-2012	04-JAN-2012	GY
Bromomethane	04-JAN-2012	04-JAN-2012	GY
Trichlorofluoromethane	04-JAN-2012	04-JAN-2012	GY
Acetone	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methylene Chloride	04-JAN-2012	04-JAN-2012	GY
trans- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methyl tert-butyl ether	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
Methyl Ethyl Ketone	04-JAN-2012	04-JAN-2012	GY

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CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051006	MW5	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
cis- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Chloroform	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
1,1,1-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Carbon Tetrachloride	04-JAN-2012	04-JAN-2012	GY
Benzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloropropane	04-JAN-2012	04-JAN-2012	GY
Trichloroethylene	04-JAN-2012	04-JAN-2012	GY
Bromodichloromethane	04-JAN-2012	04-JAN-2012	GY
Methyl Isobutyl Ketone	04-JAN-2012	04-JAN-2012	GY
1,1,2-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Toluene	04-JAN-2012	04-JAN-2012	GY
Dibromochloromethane	04-JAN-2012	04-JAN-2012	GY
Ethylene Dibromide	04-JAN-2012	04-JAN-2012	GY
Tetrachloroethylene	04-JAN-2012	04-JAN-2012	GY
1,1,1,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
Chlorobenzene	04-JAN-2012	04-JAN-2012	GY
Ethylbenzene	04-JAN-2012	04-JAN-2012	GY
m & p-Xylene	04-JAN-2012	04-JAN-2012	GY
Bromoform	04-JAN-2012	04-JAN-2012	GY
Styrene	04-JAN-2012	04-JAN-2012	GY
1,1,2,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
o-Xylene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,4-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichloropropene	04-JAN-2012	04-JAN-2012	GY
Xylene Mixture	04-JAN-2012	04-JAN-2012	GY
n-Hexane	04-JAN-2012	04-JAN-2012	GY
Toluene-d8	04-JAN-2012	04-JAN-2012	GY
4-Bromofluorobenzene	04-JAN-2012	04-JAN-2012	GY

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051021	MW6	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	29-DEC-2012	29-DEC-2012	DW
Arsenic	29-DEC-2012	29-DEC-2012	DW
Barium	29-DEC-2012	29-DEC-2012	DW

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AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051021	MW6	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Beryllium	29-DEC-2012	29-DEC-2012	DW
Boron	29-DEC-2012	29-DEC-2012	DW
Cadmium	29-DEC-2012	29-DEC-2012	DW
Chromium	29-DEC-2012	29-DEC-2012	DW
Cobalt	29-DEC-2012	29-DEC-2012	DW
Copper	29-DEC-2012	29-DEC-2012	DW
Lead	29-DEC-2012	29-DEC-2012	DW
Molybdenum	29-DEC-2012	29-DEC-2012	DW
Nickel	29-DEC-2012	29-DEC-2012	DW
Selenium	29-DEC-2012	29-DEC-2012	DW
Silver	29-DEC-2012	29-DEC-2012	DW
Thallium	29-DEC-2012	29-DEC-2012	DW
Uranium	29-DEC-2012	29-DEC-2012	DW
Vanadium	29-DEC-2012	29-DEC-2012	DW
Zinc	29-DEC-2012	29-DEC-2012	DW
Mercury	31-DEC-2012	31-DEC-2012	DL
Chromium VI	02-JAN-2013	02-JAN-2013	YY
Cyanide	02-JAN-2013	02-JAN-2013	PP
Sodium	31-DEC-2012	31-DEC-2012	DP
Chloride	01-JAN-2013	02-JAN-2013	MM
Nitrate as N	01-JAN-2013	02-JAN-2013	MM
Nitrite as N	01-JAN-2013	02-JAN-2013	MM
Electrical Conductivity	31-DEC-2012	31-DEC-2012	PB
pH	31-DEC-2012	31-DEC-2012	PB

O. Reg. 153(511) - OC Pesticides (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Gamma-Hexachlorocyclohexane	31-DEC-2012	01-JAN-2013	MA
Heptachlor	31-DEC-2012	01-JAN-2013	MA
Aldrin	31-DEC-2012	01-JAN-2013	MA
Heptachlor Epoxide	31-DEC-2012	01-JAN-2013	MA
Endosulfan	31-DEC-2012	01-JAN-2013	MA
Chlordane	31-DEC-2012	01-JAN-2013	MA
DDE	31-DEC-2012	01-JAN-2013	MA
DDD	31-DEC-2012	01-JAN-2013	MA
DDT	31-DEC-2012	01-JAN-2013	MA
Dieldrin	31-DEC-2012	01-JAN-2013	MA
Endrin	31-DEC-2012	01-JAN-2013	MA
Methoxychlor	31-DEC-2012	01-JAN-2013	MA

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051021	MW6	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - OC Pesticides (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Hexachlorobenzene	31-DEC-2012	01-JAN-2013	MA
Hexachlorobutadiene	31-DEC-2012	01-JAN-2013	MA
Hexachloroethane	31-DEC-2012	01-JAN-2013	MA
TCMX	31-DEC-2012	01-JAN-2013	MA
Decachlorobiphenyl	31-DEC-2012	01-JAN-2013	MA

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10)	31-DEC-2012	31-DEC-2012	BP
F1 (C6 to C10) minus BTEX	31-DEC-2012	31-DEC-2012	BP
F2 (C10 to C16)	03-JAN-2013	03-JAN-2013	ZP
F3 (C16 to C34)	03-JAN-2013	03-JAN-2013	ZP
F4 (C34 to C50)	03-JAN-2013	03-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Terphenyl	03-JAN-2013	03-JAN-2013	ZP

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	04-JAN-2012	04-JAN-2012	GY
Vinyl Chloride	04-JAN-2012	04-JAN-2012	GY
Bromomethane	04-JAN-2012	04-JAN-2012	GY
Trichlorofluoromethane	04-JAN-2012	04-JAN-2012	GY
Acetone	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methylene Chloride	04-JAN-2012	04-JAN-2012	GY
trans- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Methyl tert-butyl ether	04-JAN-2012	04-JAN-2012	GY
1,1-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
Methyl Ethyl Ketone	04-JAN-2012	04-JAN-2012	GY
cis- 1,2-Dichloroethylene	04-JAN-2012	04-JAN-2012	GY
Chloroform	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloroethane	04-JAN-2012	04-JAN-2012	GY
1,1,1-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Carbon Tetrachloride	04-JAN-2012	04-JAN-2012	GY
Benzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichloropropane	04-JAN-2012	04-JAN-2012	GY
Trichloroethylene	04-JAN-2012	04-JAN-2012	GY
Bromodichloromethane	04-JAN-2012	04-JAN-2012	GY
Methyl Isobutyl Ketone	04-JAN-2012	04-JAN-2012	GY

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051021	MW6	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - VOCs (Water)

Parameter	Date Prepared	Date Analyzed	Initials
1,1,2-Trichloroethane	04-JAN-2012	04-JAN-2012	GY
Toluene	04-JAN-2012	04-JAN-2012	GY
Dibromochloromethane	04-JAN-2012	04-JAN-2012	GY
Ethylene Dibromide	04-JAN-2012	04-JAN-2012	GY
Tetrachloroethylene	04-JAN-2012	04-JAN-2012	GY
1,1,1,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
Chlorobenzene	04-JAN-2012	04-JAN-2012	GY
Ethylbenzene	04-JAN-2012	04-JAN-2012	GY
m & p-Xylene	04-JAN-2012	04-JAN-2012	GY
Bromoform	04-JAN-2012	04-JAN-2012	GY
Styrene	04-JAN-2012	04-JAN-2012	GY
1,1,2,2-Tetrachloroethane	04-JAN-2012	04-JAN-2012	GY
o-Xylene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,4-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,2-Dichlorobenzene	04-JAN-2012	04-JAN-2012	GY
1,3-Dichloropropene	04-JAN-2012	04-JAN-2012	GY
Xylene Mixture	04-JAN-2012	04-JAN-2012	GY
n-Hexane	04-JAN-2012	04-JAN-2012	GY
Toluene-d8	04-JAN-2012	04-JAN-2012	GY
4-Bromofluorobenzene	04-JAN-2012	04-JAN-2012	GY

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051036	MW7	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	29-DEC-2012	29-DEC-2012	DW
Arsenic	29-DEC-2012	29-DEC-2012	DW
Barium	29-DEC-2012	29-DEC-2012	DW
Beryllium	29-DEC-2012	29-DEC-2012	DW
Boron	29-DEC-2012	29-DEC-2012	DW
Cadmium	29-DEC-2012	29-DEC-2012	DW
Chromium	29-DEC-2012	29-DEC-2012	DW
Cobalt	29-DEC-2012	29-DEC-2012	DW
Copper	29-DEC-2012	29-DEC-2012	DW
Lead	29-DEC-2012	29-DEC-2012	DW
Molybdenum	29-DEC-2012	29-DEC-2012	DW
Nickel	29-DEC-2012	29-DEC-2012	DW
Selenium	29-DEC-2012	29-DEC-2012	DW

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051036	MW7	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - Metals & Inorganics (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Silver	29-DEC-2012	29-DEC-2012	DW
Thallium	29-DEC-2012	29-DEC-2012	DW
Uranium	29-DEC-2012	29-DEC-2012	DW
Vanadium	29-DEC-2012	29-DEC-2012	DW
Zinc	29-DEC-2012	29-DEC-2012	DW
Mercury	31-DEC-2012	31-DEC-2012	DL
Chromium VI	02-JAN-2013	02-JAN-2013	YY
Cyanide	02-JAN-2013	02-JAN-2013	PP
Sodium	31-DEC-2012	31-DEC-2012	DP
Chloride	01-JAN-2013	02-JAN-2013	MM
Nitrate as N	01-JAN-2013	02-JAN-2013	MM
Nitrite as N	30-DEC-2012	31-DEC-2012	MM
Electrical Conductivity	31-DEC-2012	31-DEC-2012	PB
pH	31-DEC-2012	31-DEC-2012	PB

O. Reg. 153(511) - OC Pesticides (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Gamma-Hexachlorocyclohexane	31-DEC-2012	01-JAN-2013	MA
Heptachlor	31-DEC-2012	01-JAN-2013	MA
Aldrin	31-DEC-2012	01-JAN-2013	MA
Heptachlor Epoxide	31-DEC-2012	01-JAN-2013	MA
Endosulfan	31-DEC-2012	01-JAN-2013	MA
Chlordane	31-DEC-2012	01-JAN-2013	MA
DDE	31-DEC-2012	01-JAN-2013	MA
DDD	31-DEC-2012	01-JAN-2013	MA
DDT	31-DEC-2012	01-JAN-2013	MA
Dieldrin	31-DEC-2012	01-JAN-2013	MA
Endrin	31-DEC-2012	01-JAN-2013	MA
Methoxychlor	31-DEC-2012	01-JAN-2013	MA
Hexachlorobenzene	31-DEC-2012	01-JAN-2013	MA
Hexachlorobutadiene	31-DEC-2012	01-JAN-2013	MA
Hexachloroethane	31-DEC-2012	01-JAN-2013	MA
TCMX	31-DEC-2012	01-JAN-2013	MA
Decachlorobiphenyl	31-DEC-2012	01-JAN-2013	MA

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051042	Trip Blank	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - PHCs F1 - F4 (Water)

Parameter	Date Prepared	Date Analyzed	Initials

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AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4051042	Trip Blank	Water	28-DEC-2012	28-DEC-2012

O. Reg. 153(511) - PHCs F1 - F4 (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	28-DEC-2012	28-DEC-2012	BP
Toluene	28-DEC-2012	28-DEC-2012	BP
Ethylbenzene	28-DEC-2012	28-DEC-2012	BP
Xylene Mixture	28-DEC-2012	28-DEC-2012	BP
F1 (C6 to C10)	28-DEC-2012	28-DEC-2012	BP
F1 (C6 to C10) minus BTEX	28-DEC-2012	28-DEC-2012	BP
F2 (C10 to C16)	03-JAN-2013	03-JAN-2013	ZP
F3 (C16 to C34)	03-JAN-2013	03-JAN-2013	ZP
F4 (C34 to C50)	03-JAN-2013	03-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Terphenyl	03-JAN-2013	03-JAN-2013	ZP

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Aldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endosulfan	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Chlordane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDE	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDD	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDT	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Dieldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Methoxychlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachloroethane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Benzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Toluene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Ethylbenzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Xylene Mixture	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10)	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 12T676437

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

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CLIENT NAME: SOIL ENGINEERS LIMITED
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ATTENTION TO: Andrejs Jansons

PROJECT NO: 1211-E073

AGAT WORK ORDER: 12T676437

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Analyst

WATER ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

DATE REPORTED: Jan 04, 2013

PAGES (INCLUDING COVER): 26

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES
VERSION 2:
Reporting Samples MW2 & MW3 compared to Table 8 (February 6th 2013)

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 14T799865

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2014-01-10

DATE REPORTED: 2014-01-17

		SAMPLE DESCRIPTION:		MW101
		SAMPLE TYPE:		Water
		DATE SAMPLED:		1/10/2014
Parameter	Unit	G / S	RDL	5088193
F1 (C6 to C10)	µg/L		25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	<500
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		89

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL-GW) - NEW

5088193
The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 14T799865

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2014-01-10

DATE REPORTED: 2014-01-17

		SAMPLE DESCRIPTION:		MW101	DUP
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		1/10/2014	1/10/2014
Parameter	Unit	G / S	RDL	5088193	5088202
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20
Benzene	µg/L	5	0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20
Toluene	µg/L	22	0.20	0.40	0.42
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	0.13	0.13
m & p-Xylene	µg/L		0.20	0.62	0.63
Bromoform	µg/L	25	0.10	<0.10	<0.10

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AGAT WORK ORDER: 14T799865

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2014-01-10

DATE REPORTED: 2014-01-17

		SAMPLE DESCRIPTION:		MW101	DUP
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		1/10/2014	1/10/2014
Parameter	Unit	G / S	RDL	5088193	5088202
Styrene	µg/L	5.4	0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	0.42	0.42
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30
Xylene Mixture	µg/L	300	0.20	1.0	1.1
n-Hexane	µg/L	51	0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	50-140		103	103
4-Bromofluorobenzene	% Recovery	50-140		109	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL-GW) - NEW

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AGAT WORK ORDER: 14T799865

PROJECT NO: 1211-E073

CLIENT NAME: SOIL ENGINEERS LIMITED

ATTENTION TO: Andrejs Jansons

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2014-01-10

DATE REPORTED: 2014-01-17

		SAMPLE DESCRIPTION:		MW101
		SAMPLE TYPE:		Water
		DATE SAMPLED:		1/10/2014
Parameter	Unit	G / S	RDL	5088193
Antimony	µg/L	6	0.5	<0.5
Arsenic	µg/L	25	1.0	<1.0
Barium	µg/L	1000	2.0	50.0
Beryllium	µg/L	4	0.5	<0.5
Boron	µg/L	5000	10.0	37.8
Cadmium	µg/L	2.1	0.2	<0.2
Chromium	µg/L	50	2.0	<2.0
Cobalt	µg/L	3.8	0.5	<0.5
Copper	µg/L	69	1.0	<1.0
Lead	µg/L	10	0.5	<0.5
Molybdenum	µg/L	70	0.5	4.5
Nickel	µg/L	100	1.0	<1.0
Selenium	µg/L	10	1.0	1.0
Silver	µg/L	1.2	0.2	<0.2
Thallium	µg/L	2	0.3	<0.3
Uranium	µg/L	20	0.5	1.5
Vanadium	µg/L	6.2	0.4	<0.4
Zinc	µg/L	890	5.0	<5.0
Mercury	µg/L	0.29	0.02	<0.02
Chromium VI	µg/L	25	5	<5
Cyanide	µg/L	52	2	<2
Sodium	µg/L	490000	500	12800
Chloride	µg/L	790000	500	19000
Nitrate as N	µg/L		250	1320
Nitrite as N	µg/L		250	<250
Electrical Conductivity	uS/cm		2	783
pH	pH Units		NA	7.88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T8 (ALL-GW) - NEW

5088193 Sample required dilution prior to analysis for Anions in order to keep the analytes within the calibration range of the instrument; the RDLs were adjusted to reflect the dilution.

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T799865

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis

RPT Date: Jan 17, 2014

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	1		< 0.20	< 0.20	0.0%	< 0.20	117%	50%	140%	109%	50%	140%	108%	50%	140%
Vinyl Chloride	1		< 0.17	< 0.17	0.0%	< 0.17	121%	50%	140%	102%	50%	140%	104%	50%	140%
Bromomethane	1		< 0.20	< 0.20	0.0%	< 0.20	119%	50%	140%	111%	50%	140%	115%	50%	140%
Trichlorofluoromethane	1		< 0.40	< 0.40	0.0%	< 0.40	120%	50%	140%	114%	50%	140%	116%	50%	140%
Acetone	1		< 1.0	< 1.0	0.0%	< 1.0	104%	50%	140%	116%	50%	140%	111%	50%	140%
1,1-Dichloroethylene	1		< 0.30	< 0.30	0.0%	< 0.30	111%	50%	140%	112%	60%	130%	118%	50%	140%
Methylene Chloride	1		< 0.30	< 0.30	0.0%	< 0.30	119%	50%	140%	117%	60%	130%	115%	50%	140%
trans- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	117%	50%	140%	112%	60%	130%	118%	50%	140%
Methyl tert-butyl ether	1		< 0.20	< 0.20	0.0%	< 0.20	111%	50%	140%	125%	60%	130%	118%	50%	140%
1,1-Dichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	119%	50%	140%	122%	60%	130%	115%	50%	140%
Methyl Ethyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	93%	50%	140%	94%	50%	140%	84%	50%	140%
cis- 1,2-Dichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	81%	50%	140%	103%	60%	130%	90%	50%	140%
Chloroform	1		< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	126%	60%	130%	114%	50%	140%
1,2-Dichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	100%	50%	140%	120%	60%	130%	106%	50%	140%
1,1,1-Trichloroethane	1		< 0.30	< 0.30	0.0%	< 0.30	111%	50%	140%	125%	60%	130%	113%	50%	140%
Carbon Tetrachloride	1		< 0.20	< 0.20	0.0%	< 0.20	106%	50%	140%	123%	60%	130%	115%	50%	140%
Benzene	1		< 0.20	< 0.20	0.0%	< 0.20	95%	50%	140%	111%	60%	130%	100%	50%	140%
1,2-Dichloropropane	1		< 0.20	< 0.20	0.0%	< 0.20	99%	50%	140%	113%	60%	130%	106%	50%	140%
Trichloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	113%	50%	140%	113%	60%	130%	103%	50%	140%
Bromodichloromethane	1		< 0.20	< 0.20	0.0%	< 0.20	104%	50%	140%	121%	60%	130%	108%	50%	140%
Methyl Isobutyl Ketone	1		< 1.0	< 1.0	0.0%	< 1.0	76%	50%	140%	96%	50%	140%	90%	50%	140%
1,1,2-Trichloroethane	1		< 0.20	< 0.20	0.0%	< 0.20	87%	50%	140%	112%	60%	130%	102%	50%	140%
Toluene	1		< 0.20	< 0.20	0.0%	< 0.20	81%	50%	140%	100%	60%	130%	91%	50%	140%
Dibromochloromethane	1		< 0.10	< 0.10	0.0%	< 0.10	81%	50%	140%	102%	60%	130%	89%	50%	140%
Ethylene Dibromide	1		< 0.10	< 0.10	0.0%	< 0.10	78%	50%	140%	94%	60%	130%	86%	50%	140%
Tetrachloroethylene	1		< 0.20	< 0.20	0.0%	< 0.20	93%	50%	140%	116%	60%	130%	107%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	109%	60%	130%	99%	50%	140%
Chlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	89%	50%	140%	111%	60%	130%	101%	50%	140%
Ethylbenzene	1		< 0.10	< 0.10	0.0%	< 0.10	82%	50%	140%	101%	60%	130%	91%	50%	140%
m & p-Xylene	1		< 0.20	< 0.20	0.0%	< 0.20	108%	50%	140%	122%	60%	130%	127%	50%	140%
Bromoform	1		< 0.10	< 0.10	0.0%	< 0.10	81%	50%	140%	105%	60%	130%	96%	50%	140%
Styrene	1		< 0.10	< 0.10	0.0%	< 0.10	88%	50%	140%	101%	60%	130%	121%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	110%	60%	130%	98%	50%	140%
o-Xylene	1		< 0.10	< 0.10	0.0%	< 0.10	87%	50%	140%	116%	60%	130%	103%	50%	140%
1,3-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	84%	50%	140%	100%	60%	130%	91%	50%	140%
1,4-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	82%	50%	140%	97%	60%	130%	89%	50%	140%
1,2-Dichlorobenzene	1		< 0.10	< 0.10	0.0%	< 0.10	93%	50%	140%	112%	60%	130%	102%	50%	140%
1,3-Dichloropropene	1		< 0.30	< 0.30	0.0%	< 0.30	87%	50%	140%	101%	60%	130%	93%	50%	140%
n-Hexane	1		< 0.20	< 0.20	0.0%	< 0.20	NA	50%	140%	114%	60%	130%	116%	50%	140%

AGAT QUALITY ASSURANCE REPORT (V1)

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T799865

ATTENTION TO: Andrejs Jansons

Trace Organics Analysis (Continued)

RPT Date: Jan 17, 2014			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 to C10)	1		< 25	< 25	0.0%	< 25	84%	60%	140%	96%	60%	140%	116%	60%	140%
F2 (C10 to C16)	1		< 100	< 100	0.0%	< 100	110%	60%	140%	92%	60%	140%	92%	60%	140%
F3 (C16 to C34)	1		< 100	< 100	0.0%	< 100	109%	60%	140%	91%	60%	140%	92%	60%	140%
F4 (C34 to C50)	1		< 100	< 100	0.0%	< 100	105%	60%	140%	106%	60%	140%	103%	60%	140%

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: SOIL ENGINEERS LIMITED

PROJECT NO: 1211-E073

AGAT WORK ORDER: 14T799865

ATTENTION TO: Andrejs Jansons

Water Analysis

RPT Date: Jan 17, 2014			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	5089131		<0.5	<0.5	0.0%	< 0.5	105%	70%	130%	105%	80%	120%	111%	70%	130%
Arsenic	5089131		<1.0	<1.0	0.0%	< 1.0	98%	70%	130%	103%	80%	120%	123%	70%	130%
Barium	5089131		69.9	70.5	0.9%	< 2.0	96%	70%	130%	104%	80%	120%	98%	70%	130%
Beryllium	5089131		<0.5	<0.5	0.0%	< 0.5	102%	70%	130%	105%	80%	120%	103%	70%	130%
Boron	5089131		12.7	13.7	0.0%	< 10.0	102%	70%	130%	109%	80%	120%	104%	70%	130%
Cadmium	5089131		<0.2	<0.2	0.0%	< 0.2	100%	70%	130%	103%	80%	120%	108%	70%	130%
Chromium	5089131		<2.0	<2.0	0.0%	< 2.0	101%	70%	130%	107%	80%	120%	96%	70%	130%
Cobalt	5089131		<0.5	<0.5	0.0%	< 0.5	97%	70%	130%	101%	80%	120%	90%	70%	130%
Copper	5089131		<1.0	<1.0	0.0%	< 1.0	100%	70%	130%	105%	80%	120%	87%	70%	130%
Lead	5089131		<0.5	<0.5	0.0%	< 0.5	97%	70%	130%	100%	80%	120%	90%	70%	130%
Molybdenum	5089131		0.6	0.6	0.0%	< 0.5	101%	70%	130%	104%	80%	120%	111%	70%	130%
Nickel	5089131		<1.0	<1.0	0.0%	< 1.0	100%	70%	130%	105%	80%	120%	88%	70%	130%
Selenium	5089131		<1.0	<1.0	0.0%	< 1.0	100%	70%	130%	104%	80%	120%	126%	70%	130%
Silver	5089131		<0.2	<0.2	0.0%	< 0.2	99%	70%	130%	109%	80%	120%	98%	70%	130%
Thallium	5089131		<0.3	<0.3	0.0%	< 0.3	96%	70%	130%	105%	80%	120%	93%	70%	130%
Uranium	5089131		0.7	0.7	0.0%	< 0.5	100%	70%	130%	101%	80%	120%	100%	70%	130%
Vanadium	5089131		<0.4	<0.4	0.0%	< 0.4	98%	70%	130%	103%	80%	120%	99%	70%	130%
Zinc	5089131		<5.0	<5.0	0.0%	< 5.0	101%	70%	130%	106%	80%	120%	101%	70%	130%
Mercury	1		<0.02	<0.02	0.0%	< 0.02	100%	70%	130%	100%	80%	120%	100%	70%	130%
Chromium VI	1		< 5	< 5	0.0%	< 5	101%	70%	130%	101%	80%	120%	103%	70%	130%
Cyanide	1		11	11	0.0%	< 2	98%	70%	130%	94%	80%	120%	86%	70%	130%
Sodium	5088193	5088193	12800	12800	0.6%	< 500	105%	70%	130%	104%	80%	120%	94%	70%	130%
Chloride	5088193	5088193	19000	18600	2.0%	< 100	93%	70%	130%	101%	70%	130%	100%	70%	130%
Nitrate as N	5088193	5088193	1320	1300	1.1%	< 50	99%	70%	130%	99%	70%	130%	100%	70%	130%
Nitrite as N	5088193	5088193	<250	<250	0.0%	< 50	NA	70%	130%	101%	70%	130%	117%	70%	130%
Electrical Conductivity	5089131		570	570	0.0%	< 2	108%	90%	110%	NA			NA		
pH	5089131		7.61	7.91	3.9%	NA	98%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 14T799865

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: SOIL ENGINEERS LIMITED

AGAT WORK ORDER: 14T799865

PROJECT NO: 1211-E073

ATTENTION TO: Andrejs Jansons

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

SAW-WHET GOLF COURSE
1401 BRONTE ROAD
OAKVILLE, ONTARIO
L6M 4G3

ATTENTION: MR. GARI INGERTSA

RE: **PHASE ONE ENVIRONMENTAL SITE ASSESSMENT**
SAW-WHET GOLF COURSE
1401 BRONTE ROAD
OAKVILLE, ONTARIO

REPORT NO. 2012-23820R

APRIL 26, 2012

DISTRIBUTION

3 COPIES: **SAW-WHET GOLF COURSE**

ORIGINAL: **(FILE NO. SP-3256)** **SOIL PROBE LTD.**

SOIL PROBE LTD.
CONSULTING GEOTECHNICAL, INSPECTION & TESTING ENGINEERS

110 IRONSIDE CRESCENT, UNIT 20, TORONTO, ONTARIO, M1X 1M2
TEL: (416) 754-7055 FAX: (416) 754-1259 e-mail: info@soilprobe.ca

DATE: April 26, 2012

REPORT NO.: 2012-23820R
FILE NO.: SP-3256

Mr. Gari Ingertsa
Saw-Whet Golf Course
1401 Bronte Road
Oakville, Ontario
L6M 4G3

E-mail: gari@sawwhetgolf.ca

Re: Phase One Environmental Site Assessment
Saw-Whet Golf Course
1401 Bronte Road
Oakville, Ontario

Dear Sir,

Soil Probe Ltd., (SPL) is pleased to present the report of a Phase I Environmental Site Assessment (ESA) update of the above-referenced property.

The subject property is being acquired for future development purposes. It is understood that this Phase I ESA was required for pre-purchase, due diligence, and possibly for financing purposes. The findings presented in this report may be used for this purpose subject to the limitations mentioned herein.

This report presents the findings of the Phase I ESA consisting of historical records review, site reconnaissance, interviews with knowledgeable and regulatory officials, together with a discussion of findings and recommendations.

The subject 137-acre property is an irregular shaped, parcel of institutional land known as *Saw-Whet Golf Course* (that has been dissected into two parcels by a Hydro-Right-of-Way). The site comprises an 18 hole public golf course, a public driving range, a practice putting green, a clubhouse, *The Owl's Nest Restaurant*, a patio, and office/maintenance buildings.

Overall, the buildings cover less than 20 % of the site area. The remaining parts of the property consist of golfing fairways and greens, asphalt-paved driveways and surface parking, with a man-made pond and landscaped areas fronting Bronte Road.

Except for *Deerfield Golf Course* and *Fourteen Mile Creek* located contiguous with the east and south property lines, the surrounding areas are partly developed with residential and institutional land uses, including *Halton Regional Centers*, located contiguous with the south property lines at 1151 and 1179 Bronte Road, respectively and *Bronte Seventh Day Adventist Church*, located 25 m northwest of the subject property, at 2021 Bronte Road. There are no drycleaning facilities, automotive repair garages, gasoline service stations, or heavy industrial land uses noted within a 250 m radius of the subject property.

Historically, the subject site was first developed with *Saw-Whet Golf Course* in the early 1980s.

The surrounding areas were also first developed in the early 1980s with residential and institutional land uses.

Based on the findings of the historical records review, site reconnaissance, and personal interviews; no **actual** sources of soil and groundwater contamination were identified in association with the subject property.

Potential on-site sources of soil and groundwater contamination would include:

- Organochlorine chemicals (OCs) from pesticide usage associated with the existing golf course facility operating on the site.
- Petroleum hydrocarbons (PHCs) and metals associated with the gasoline, diesel, and waste oil aboveground storage tanks (ASTs) located on the western and southern portion of the site.
- PHCs, volatile organic compounds (VOCs), and metals associated with the maintenance operations in the southern portion of the site.

Potential off-site sources of soil and groundwater contamination would include:

- OCs from pesticide usage associated with the existing golf course facility (Deerfield Golf Course) located at 2363 North Service Road West.
- PHCs and metals associated with the underground storage tanks (USTs) located at 1151 Bronte Road.

Therefore, it is recommended that a Phase II ESA be conducted on the subject property in order to verify or refute the aforementioned potential sources of contamination. The scope of the Phase II ESA should entail six to eight sampled boreholes including the installation of three groundwater monitoring wells. Soil and

groundwater samples should be subsequently tested for compliance with the Ontario *Regulation 153/04 Soil, Groundwater and Sediment Standards for Use Under Part XV.1* of the Environmental Protection Act Table 3 criteria for institutional land uses in a non-potable groundwater condition (2011).

We trust you will find this report to be complete within our terms of reference. Should you have any questions regarding the information contained in the report, or require further assistance, please contact our office.

Respectfully Submitted,
SOIL PROBE LTD.

Anwar Memon, M.Phil., DIC., P.Eng.
Principal
AM\js\SHARE12\PHASE I 2012\SP3256-23820R – Ph I – 1401 Bronte Rd.

cc. Mr. Mike Patterson -mikep@sawwhetgolf.ca
Mr. Ram Nichal - mischal@trebnet.com

TABLE OF CONTENT

DRAWINGS

APPENDICES

SOIL PROBE LTD.
CONSULTING GEOTECHNICAL, INSPECTION & TESTING ENGINEERS

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TEL: (416) 754-7055 FAX: (416) 754-1259 e-mail: info@soilprobe.ca

DATE: April 26, 2012

REPORT NO.: 2012-23820R
FILE NO.: SP-3256

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
SAW-WHET GOLF COURSE
1401 BRONTE ROADOAKVILLE, ONTARIO

1.0 INTRODUCTION

Soil Probe Ltd., was retained to conduct a Phase I Environmental Site Assessment (ESA) of an institutional property located at 1401 Bronte Road, in Oakville, Ontario. The subject property is being acquired for future development purposes.

The purpose of a Phase I ESA is to identify and document any actual or potential environmental contamination associated with the property. A Phase I ESA is a preliminary study in which it is sufficient only to assess those liabilities which can be documented from a visual inspection of the property or readily available sources of public information. The Phase I ESA does not include sampling or testing of soil, groundwater, or building materials. These analyses would be conducted in a Phase II ESA or a designated hazardous building materials survey, if warranted.

It is understood that the Phase I ESA was required for pre-purchase, due diligence, and possibly for financing purposes. The findings presented in this report may be used for this purpose subject to the limitations stated under *Section 9.0*. No third parties are entitled to rely upon this report without the express written consent of Soil Probe Ltd. Any use which a third party makes of this report is the sole responsibility of said third party, Soil Probe Ltd., and it associated firm AiMS Environmental accepts no responsibility for any damages.

1.1 LOCATION AND LEGAL DESCRIPTION

The subject site is located northwest of Highway 403, on the northeast corner of the Bronte Road and Upper Middle Road West intersection, as shown in **Drawing 1** and the photographs in **Appendix A**. The municipal address of the property is 1401 Bronte Road, Oakville, Ontario.

The legal description of the subject property is Part of Lots 28, 29, and 30, Concession II, South of Dundas Street (designated as Parts 1, 4, and 11 of Reference Plan 20R-6034, Parts 1 and 2 of Reference Plan 20R-12767, and Parts 1 and 2 of Reference Plan 20R-12769) in the Town of Oakville, Regional Municipality of Halton, Province of Ontario.

2.0 SCOPE OF INVESTIGATION

The Phase I ESA was conducted in general accordance with the *Canadian Standards Association* Z768-01 protocol. The format of this report would not support filing a Record of Site Condition (RSC) with the Ministry of the Environment (MOE). The scope of the investigation included the following:

- Review of existing historical records for the subject site and surrounding areas to identify actual or potential sources of environmental contamination.
- Site reconnaissance, including an environmental inspection of any existing buildings, to observe and document the present environmental condition.
- Interviews with knowledgeable persons and regulatory officials for additional information relating to any environmental concerns.
- Preparation of this assessment report of pertinent findings, conclusions and recommendations.

3.0 HISTORICAL RECORDS REVIEW

The historical records review of past land use of the subject site and surrounding areas included illustrated atlases, topographical maps, city directories, land registry records, government records, and aerial photographs. Fire insurance plans were not available for review.

On the north shore of Lake Ontario, lands presently comprising the Town of Oakville originated at the mouth of the Sixteen Mile Creek following a 960-acre grant of land from the Crown in 1827. These fertile lands were farmed and settlements grew. By the 1970s, the settlement had become a major centre of commerce and industry with commercial development extending northwards along Bronte Road from Lake Ontario.

3.1 SUBJECT SITE

The subject site was originally part of Lots 27, 28, 29 and 30, Concession II, in the Township of Trafalgar, County of Halton.

Illustrated atlases from the late 1800s, topographical maps from the early 1900s, and aerial photographs to the early 1980s showed the property to comprise agricultural land.

In 1983, part of the township lot was partitioned by the Town of Oakville into 12 parts (including Parts 1, 4, and 11) as outlined in Reference Plan 20R-6034, which is reproduced in **Appendix B**.

An aerial photograph from 1995 showed the golf course facility on the subject property with the clubhouse and maintenance building constructed on the western and southern portions of the site.

In 1998, part of the township lot was further partitioned by the Town of Oakville into parts, including Parts 1 and 2 of Reference Plan 20R-12767, Part 1 of Reference Plan 20R-12768, and Parts 1 and 2 of Reference Plan 20R-12769, which are also reproduced in **Appendix B**.

Aerial photographs taken since 2000 have shown the golf course facility on the subject property in a similar configuration, with the addition of a man-made pond on the western portion of the site.

According to land registry records (as reproduced in **Appendix C**), owners of the property have included the following:

Her Majesty the Queen, In Right of Ontario as Represented by the Chair of the Management Board of Cabinet	Prior to 1998
540129 Ontario Limited (change of name in 2004 to **Saw-Whet Golf Course Ltd.**)	1998 to Present

3.2 SURROUNDING AREAS

The historical land uses of the surrounding areas were similar to the subject site. The surrounding areas were also first developed in the early 1980s with residential and institutional land uses.

There were no past drycleaning facilities, automotive repair garages, gasoline service stations, or heavy industrial land uses noted within a 250 m radius of the subject property.

3.3 PREVIOUS ENVIRONMENTAL REPORTS

We reviewed a Geotechnical report, titled *"Geotechnical Investigation For the Proposed Residential Subdivision (Saw-Whet Golf Course), 1401 Bronte Road, Oakville, Ontario"* conducted by Soil Probe Ltd. (Report No. 2012-23813 dated April 17, 2012.

This report did not note any significant environmental concerns associated with the subject property based on the findings of 12 boreholes that were drilled to a maximum depth of 5 m below existing grade. All of the boreholes revealed a layer of topsoil and fill materials, overlying a deposit of clayey silt till and limestone. Groundwater was encountered in three of the boreholes at depths of 1.8, 2.7, 3.2, 3.7, and 4.1 m below existing grade. However, no groundwater samples were collected. No other environmental concerns were noted.

Copies of the Borehole Logs are reproduced in **Appendix D**.

3.4 GOVERNMENT INFORMATION

Government records including Municipal, Provincial, and Federal Databases were reviewed and the findings are reported in the following subsections:

3.4.1 Municipal Database Records

A written reply to a request filed for information concerning control orders, violation notices, or other environmental concerns was obtained on April 16, 2012 from Mr. Tim Tucker, Records & Freedom of Information Officer with the Town of Oakville's Clerk's Department, which is reproduced in **Appendix E**. Records reviewed indicated that the municipality has no records of any environmental concerns for the subject property.

3.4.2 Provincial Database Records

A review of the 1991 Ministry of the Environment (MOE) *Waste Disposal Site Inventory* revealed no active or closed waste disposal sites, and there are no coal gasification or tar distillation plants within a 250 m radius of the subject site according to the MOE 1987 *Inventory of Coal Gasification Plant Waste Sites in Ontario and 1988 Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario*.

A review of the 2004 MOE *Ontario Inventory of Polychlorinated Biphenyls (PCBs) Storage Sites* indicated that the property has never been registered as a PCB Storage Facility.

A *Freedom of Information* request was filed on March 19, 2012 for knowledge of any control orders, violation notices, or other environmental concerns with the MOE, which is reproduced in **Appendix F**. Other than a receipt of request dated April 12, 2012, no other information has been received to date. Any forthcoming documentation from the aforementioned regulatory agency will be reviewed, and if the response specifies any environmental concerns, it will be addressed and forwarded to the Client.

A review of the MOE Brownfields Environmental Site Registry indicated no *Records of Site Condition* under Ontario *Regulation 153/04* (Part XV.1 of the EPA) have been registered for the subject site or any properties within a 250 m radius.

A written request was filed on April 23, 2012 with Prem Lal, Customer Service Advisor with the Technical Standards and Safety Authority (TSSA), for additional information regarding any storage tanks, leaks, spills, or cleanups in association with the subject property and/or 1151 Bronte Road, which is reproduced in **Appendix G**. In a response

dated April 24, 2012, it was indicated that the TSSA has a record of a private fuel outlet with ASTs on the subject site. Inspection reports from 2001 and 2004 revealed the equipment is in accordance with the TSSA regulations and codes. The response also revealed a record of three active USTs located at 1151 Bronte Road.

A search of provincial government databases for the subject site and surrounding area within a 250 m radius was completed by Environmental Risk Information Services Inc. (ERIS) on April 5, 2012. All found records have been reproduced as **Appendix H** and discussed as follows:

One record was listed in the *Pesticide Register* (PES) database for Yun Qing Xu located at 2040 Bronte Road, as a licensed operator. This record does not identify conditions likely to pose any environmental concerns for the subject property.

One record was listed in the *Private and Retail Fuel Storage Tanks* (PRT) database for The Regional Municipality of Halton located at 1151 Bronte Road, for a 13,500-L private fuel storage tank. This record does identify conditions likely to pose an environmental concern for the subject property.

A review of the MOE *Regulation 347 Public Information Dataset* indicated that the subject site was not on file with the MOE as a waste generator or receiver of registrable or hazardous liquid or solid wastes. However *Safety Kleen* manifests revealed a generator number (ON1075400) for the subject property for hazardous wastes including recyclable cleaning compounds and waste petroleum distillates.

Two records were found in the *Ontario Spills* (SPL) database. The first record pertains to 1179 Bronte Road, where ten to 15 litres of gasoline were spilt onto the ground. The second record is for 1151 Bronte Road, where 2 tonnes of diesel fuel from an underground storage tank (UST) leaked. The first record does not identify conditions likely to pose any environmental concerns, however the UST leak does identify conditions likely to pose an environmental concern for the subject property.

Sixteen records were found in the Well Water Information System (WWIS) database for Wells drilled to a maximum depth of 30 m between 1952 and 2011 and the soil stratigraphy consisted of topsoil, clay, sand, and layers of gravel. Twelve of the wells were installed for drinking purposes.

3.4.2 Federal Database Records

A review of the 2007 Environment Canada *National Pollution Release Inventory* for Halton Region revealed no companies that manufacture, process, or utilize any of the reported 400 designated substances or hazardous materials within a 250 m radius of the subject site.

A review of the *Federal Contaminated Sites Inventory* indicated that there are no existing or former contaminated sites located within a 250 m radius of the subject site.

A search of federal government databases for the subject site and surrounding area, within a 250 m radius, was also completed by ERIS on April 5, 2012. No Federal Database records were found.

3.5 PRIVATE DATABASE RECORDS

A search of private databases for the subject site and surrounding area, within a 250 m radius, was also completed by ERIS on April 5, 2012. No Private Database records were found.

3.6 GEOLOGIC AND HYDROGEOLOGIC SETTINGS

The subject property is located in an urban area of Oakville, within a broad physiographic region known as the *Lake Iroquois Plain* (Chapman and Putnam, *The Physiography of Southern Ontario*, Ministry of Natural Resources, 1984). This plain has a rolling to undulating topography at the Niagara Escarpment to the northwest, but slopes gently to the southeast.

The local topography is gently rolling with geodetic ground surface elevations ranging between 103 and 106 m in the vicinity, with an average gradient of 1 %, which is shown in **Drawing 2**. The local drainage is controlled by the Fourteen Mile Creek, which passes within 50 m to the north of the subject site as it flows southeast towards Lake Ontario.

The *Pleistocene-era* geology of the area has been shaped by *Wisconsinan* glaciation and subsequent deposition in the glacial Lake Iroquois. The overburden consists of a veneer of shallow reddish brown clay or clayey silt till, known as the *Halton Till* (Karrow 1958) which is itself underlain by shale bedrock.

Shallow bedrock is estimated at a depth of more than 5 m below existing grade, composed of weathered *Ordovician period* grey and red shale of the *Queenston Formation*. The bedrock consists of mottled shale with scattered arenaceous bands of limestone.

The subject site is not situated within the four known radon gas areas noted in Ontario (Ontario Geological Survey, *Soil Gas Study of Southern Ontario*, 1993 Open File Report 5847). Therefore, emissions of radon in the vicinity of the property are unlikely.

The regional groundwater table is estimated to occur at approximately 5 to 10 m below existing grade, although locally perched conditions have been reported at shallower depths in the area.

The regional groundwater flow is believed to be controlled by the topography, glacial geology, and the Fourteen Mile Creek and its tributaries; and is surmised to be directed southeastward.

Local disruptions in the groundwater flow direction could result from the presence of buried utility conduits along Bronte Road and Upper Middle Road West.

4.0 INTERVIEWS

A personal interview was conducted on March 29, 2012 for additional information concerning the subject site or surrounding areas, with Mr. Gari Ingertsa, General Manager of *Saw-Whet Golf Course*. It was reported that the golf course facility has been in operation since the early 1980s. It was also reported that the existing aboveground storage tanks (ASTs) (both gasoline and diesel) were being changed to double-walled ASTs with associated concrete pads in the near future. *Safety-Kleen* manifests were provided for review and are reproduced as **Appendix I**.

Mr. Ingertsa also reported that pesticides are used on the property and are applied by a monitoring program. Nevertheless, Material Safety Data Sheets were also provided for review and are also reproduced as **Appendix I**.

Mr. Ingertsa also reported that basic repairs occur on-site in the maintenance building, where a parts washer, drums and pails, flammable cabinet and minor surficial staining on the concrete floor was observed. No other environmental concerns were known.

5.0 SITE RECONNAISANCE

An inspection of the subject property, and surrounding areas was conducted by Ms. Sarah Sipak, Environmental Scientist with AiMS Environmental on March 29, 2012. Additional information and assistance was provided by Mr. Gari Ingertsa.

5.1 PROPERTY CHARACTERISTICS

The subject site is 137 acres in size, irregular in shape, and has been dissected into two parcels by a Hydro-Right-of-Way; with a frontage of 4,954 ft. along Bronte Road and 328 ft. along Upper Middle Road West, as shown in **Drawing 3**.

The site comprises an 18 hole public golf course, a public driving range, a practice putting green, a clubhouse, *The Owl's Nest Restaurant*, a patio, and office/maintenance buildings.

Overall, the buildings cover less than 20 % of the site area. The remaining parts of the property comprise golfing fairways and greens, asphalt-paved driveways and surface parking, with a man-made pond and landscaped areas fronting Bronte Road.

Surface water from the property drains overland towards either Bronte Road, Upper Middle Road West, or the man-made pond on the western portion of the site. There is no evidence to suggest the presence of abandoned or existing potable or groundwater monitoring wells or septic tanks on the subject site.

No evidence of fill or vent pipes indicative of USTs, fill or debris materials, stressed vegetation, or other environmental concerns were identified on the property during our site reconnaissance on March 29, 2012.

5.2 BUILDING INSPECTION

The scope of the inspection included a walk-through visual survey of the golf course facility and the interior of the clubhouse and office/maintenance buildings. Photographs were taken for future reference, some of which are also reproduced in **Appendix A**.

The Clubhouse

The clubhouse is a single-storey brick-faced concrete block structure located on the northern part of the property.

The clubhouse comprises a lounge/patio area at the front, with a kitchen at the rear, and a basement.

Heating and cooling within the building is provided by two *Carrier* propane-fired furnaces located in the basement and air-conditioning units located at the rear of the clubhouse. No evidence of any heating oil storage tanks were noted. In addition, no asbestos-containing materials (ACMs) were

noted in association with any of the mechanical equipment. Based on the age of the building, the refrigerant in the HVAC units may contain chlorofluorocarbons (CFCs), which are known as ozone-depleting substances (ODSs). No immediate action is required at this time; however – while servicing or removing these units – the CFC refrigerants and any other ODSs should be recovered by a licensed contractor according to relevant ministry legislation.

The domestic hot water supply is provided by an *A.O. Smith* electrical hot water heater, also located in the basement. Where observed, the copper pipelines associated with the hot water heater were insulated with fibreglass. No ACMs were observed.

The electrical power supply to the building is provided by *Marcus* transformers and *Siemens* splitters, switches, and breakers which are mounted onto plywood panels in the basement. No ACM mounting panels were observed. No PCB fluids were suspected in association with any of the electrical equipment.

In addition, a walk-in refrigerator and freezer were observed in the basement. These units may also contain chlorofluorocarbons (CFCs), which are known as ozone-depleting substances (ODSs). No immediate action is required at this time; however – while servicing or removing these units – the CFC refrigerants and any other ODSs should be recovered by a licensed contractor according to relevant ministry legislation.

Storage Shed

A metal clad storage building was observed at the rear of the clubhouse, which is used for storing the unused golf carts. No staining was observed on the concrete floor.

One gasoline aboveground storage tank (AST) (with a pump) and a propane AST were observed on the west side of the storage shed. No surficial staining was observed in the vicinity of the ASTs.

Office Building

The office building is a single-storey wood-panelled concrete block structure locatedon the northern part of the property.

The building is heated by electric baseboard and propane-fired heating. Two propane ASTs were observed along the south side of the building. No surficial staining was noted.

Maintenance Building/Yard

The maintenance building/yard comprises a 1-storey metal clad storage building and a yard that is enclosed by a chain-link fence.

The maintenance building is used for equipment storage and repair. A parts washer, oil drum, diesel engine oil pails, and a flammable cabinet were observed in the building. Minor surficial staining was observed on the concrete floor.

The maintenance yard is used for storage purposes. A diesel AST (with a pump) and waste oil AST were noted along the rear of the yard. A storage building located within the yard is used for pesticide storage purposes.

Maintenance Office

The 2-storey office building is heated by electric baseboard heating.

Illuminations within the aforementioned buildings are provided by newer fluorescent light fixtures. It is unlikely that any of these light fixtures contain PCB ballasts.

Interior finishes within the aforementioned buildings comprise newer latex painted drywall; with hardwood flooring and newer 12 by 12 in. vinyl floor tiles in the public areas. A Leadcheck® was conducted on a representative sample of interior paintwork, which revealed no hazardous level of lead to be present. In addition, no older 9 by 9 in. asbestos-backed vinyl floor tiles were observed.

Our limited visual inspection did not reveal any urea formaldehyde foam insulation (UFFI), asbestos fireproofing insulation, or any radioactive materials within the subject building.

Institutional recyclable and waste materials are stored in bins located at the rear of the clubhouse, which is collected by Waste Management for off-site disposal bi-weekly. No hazardous liquid or solid wastes were observed.

5.3 SURROUNDING AREAS

Except for *Deerfield Golf Course* and *Fourteen Mile Creek* located contiguous with the east and south property lines, the surrounding areas are partly developed with the following residential and institutional land uses:

Residential:

- Single-family dwellings surrounding the property along Bronte Road and Upper Middle Road West.

Institutional:

- *Halton Region Centre*, located contiguous with the south property line at 1151 Bronte Road. Records reviewed revealed three USTs on the property.
- *Halton Region Centre*, located contiguous with the south property line at 1179 Bronte Road.
- *Bronte Seventh Day Adventist Church*, located 25 m northwest of the subject property, at 2021 Bronte Road.

There are no drycleaning facilities, automotive repair garages, gasoline service stations, or heavy industrial land uses noted within a 250 m radius of the subject property.

Utility conduits running parallel along Bronte Road and Upper Middle Road West include *Union Gas* and *Oakville Hydro* lines; *Bell Canada* and *Rogers Communications* cables; and municipal watermain, storm, and sanitary sewers.

6.0 REVIEW OF INFORMATION

Based on the findings of the historical records review, site reconnaissance, and personal interviews; no **actual** sources of soil and groundwater contamination were identified in association with the subject property.

Potential *on-site* sources of soil and groundwater contamination would include:

- Organochlorine chemicals (OCs) from pesticide usage associated with the existing golf course facility operating on the site.
- Petroleum hydrocarbons (PHCs) and metals associated with the gasoline, diesel, and waste oil aboveground storage tanks (ASTs) located on the western and southern portion of the site.
- PHCs, volatile organic compounds (VOCs), and metals associated with the maintenance operations in the southern portion of the site.

Potential *off-site* sources of soil and groundwater contamination would include:

- OCs from pesticide usage associated with the existing golf course facility (*Deerfield Golf Course*) located at 2363 North Service Road West.
- PHCs and metals associated with the underground storage tanks (USTs) located at 1151 Bronte Road.

7.0 DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Historically, the subject site was first developed with *Saw-Whet Golf Course* in the early 1980s.

The surrounding areas were also first developed in the early 1980s with residential and institutional land uses.

Based on the findings of the historical records review, site reconnaissance, and personal interviews; no **actual** sources of soil and groundwater contamination were identified in association with the subject property.

Potential *on-site* sources of soil and groundwater contamination would include:

- Organochlorine chemicals (OCs) from pesticide usage associated with the existing golf course facility operating on the site.
- Petroleum hydrocarbons (PHCs) and metals associated with the gasoline, diesel, and waste oil aboveground storage tanks (ASTs) located on the western and southern portion of the site.
- PHCs, volatile organic compounds (VOCs), and metals associated with the maintenance operations in the southern portion of the site.

Potential *off-site* sources of soil and groundwater contamination would include:

- OCs from pesticide usage associated with the existing golf course facility (*Deerfield Golf Course*) located at 2363 North Service Road West.
- PHCs and metals associated with the underground storage tanks (USTs) located at 1151 Bronte Road.

Therefore, it is recommended that a Phase II ESA be conducted on the subject property in order to verify or refute the aforementioned potential sources of contamination. The scope of the Phase II ESA should entail six to eight sampled boreholes including the installation of three groundwater monitoring wells. Soil and groundwater samples should be subsequently tested for compliance with the Ontario *Regulation 153/04 Soil, Groundwater and Sediment Standards for Use Under Part XV.1* of the Environmental Protection Act Table 3 criteria for institutional land uses in a non-potable groundwater condition (2011).

8.0 LIMITATIONS

Services performed by AiMS Environmental were conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the environmental consulting engineering profession. This report does not exhaustively cover all possible environmental conditions or circumstances that may exist on the property. If a service is not expressly indicated, it should not be assumed that it was provided.

In evaluating the subject site, AiMS Environmental has relied on the Client to provide all existing relevant reports. Furthermore, we also relied in good faith on information provided by any other individuals noted in the report. We assume that all the information provided is factual and accurate. We accept no responsibility for any deficiencies, misstatements, or inaccuracies contained in this report as a result of omissions, misrepresentation, or fraudulent acts by the Client or any persons contacted.

It should be recognized that the passage of time affects the information provided in this report. Environmental conditions of a property can change. Opinions relating to the site conditions are based upon information that existed at the time the conclusions were formulated. It should also be noted that current environmental guidelines and regulations are subject to change; such changes, when put into effect, could alter the conclusions and recommendations noted through this report.

9.0 CONSULTANT QUALLIFICATIONS

Soil Probe Ltd., is a Geotechnical Consulting Engineering firm incorporated in 1986 in accordance with the Ontario, Canada rules and regulations. It provides soils and materials testing and inspection services as well as environmental studies. Soil Probe is registered in Ontario and operates under a Certificate of Authorization # 0121616 from the Professional Engineers Ontario. Mr. Anwar Memon, M.Phil., D.I.C., P.Eng., is Principal of Soil Probe and has 30 years of applied experience in geotechnical engineering as a senior consultant.

Mr. Jagani is a graduate of the University of Toledo, Ohio, and the University of Nairobi, Kenya with Bachelor and Master of Science Degrees in Civil Engineering. He became a Professional Engineer in 1990 and has been designated as a "Qualified Person" with the Ministry of the Environment under *Ontario Regulation 153/04.*

Mr. Jagani has been working in the environmental field for over 20 years and has since conducted and managed over 1,000 environmental projects including Phase I and II environmental site assessments (ESAs); geo-environmental subsurface investigations; site characterizations, decommissioning and remediation; and environmental building inspections, including asbestos insulation material and lead-based paint surveys.

The relationship between Soil Probe Ltd., and Aims Environmental is one of providing complementary services to clients and on such occasions one firm may act as a sub-consultant to the other. Each company is separately owned and operated and there are no ownership or legal ties between the two firms.

Respectfully Submitted,
SOIL PROBE LTD.

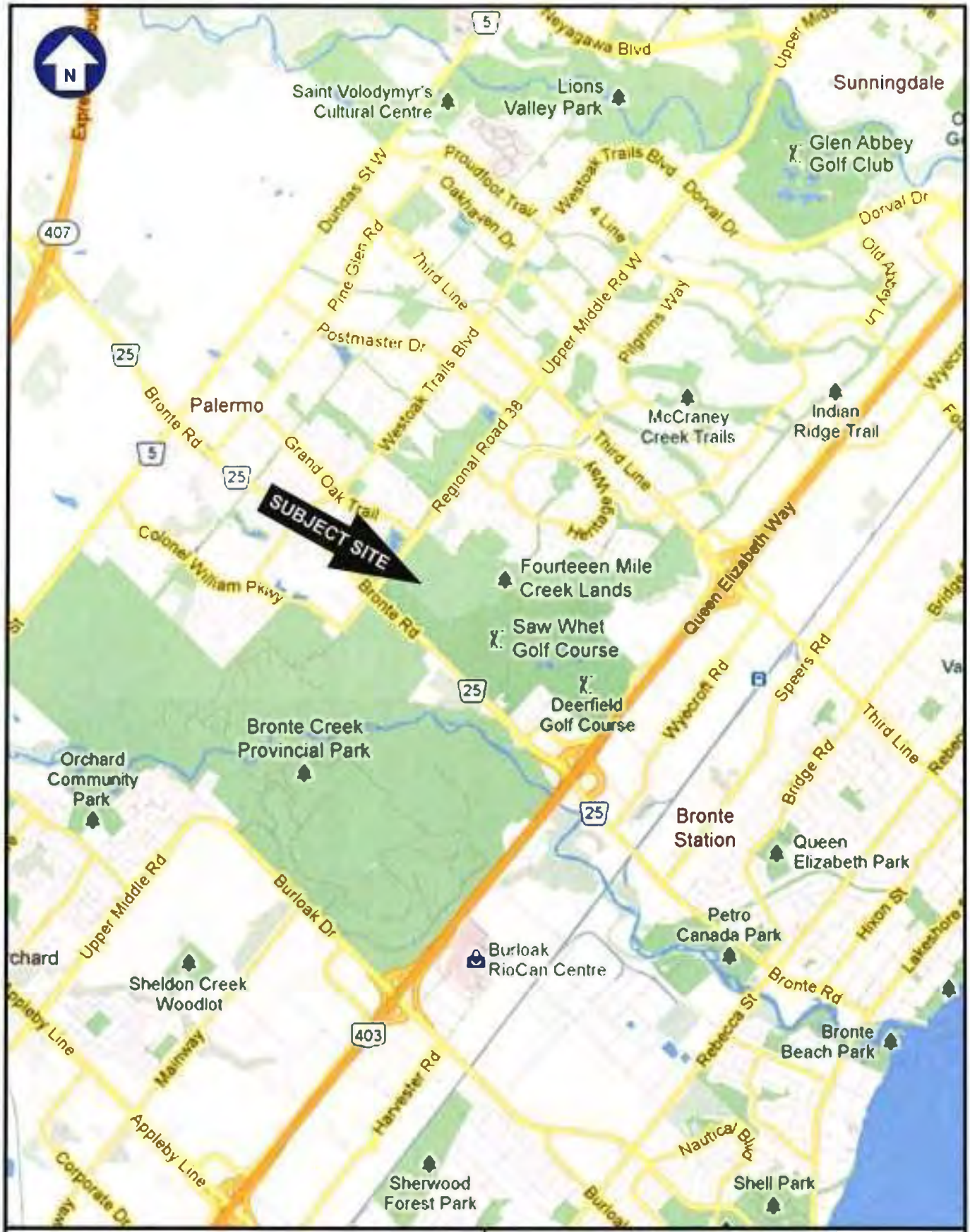
Original Signed

Mohamedarif M. Jagani, P.Eng., PE,
Environmental Consultant

Anwar Memon, M.Phil., DIC., P.Eng.
Principal

DRAWING 1

KEY MAP



KEY MAP

1401 Bronte Road
Oakville, Ontario

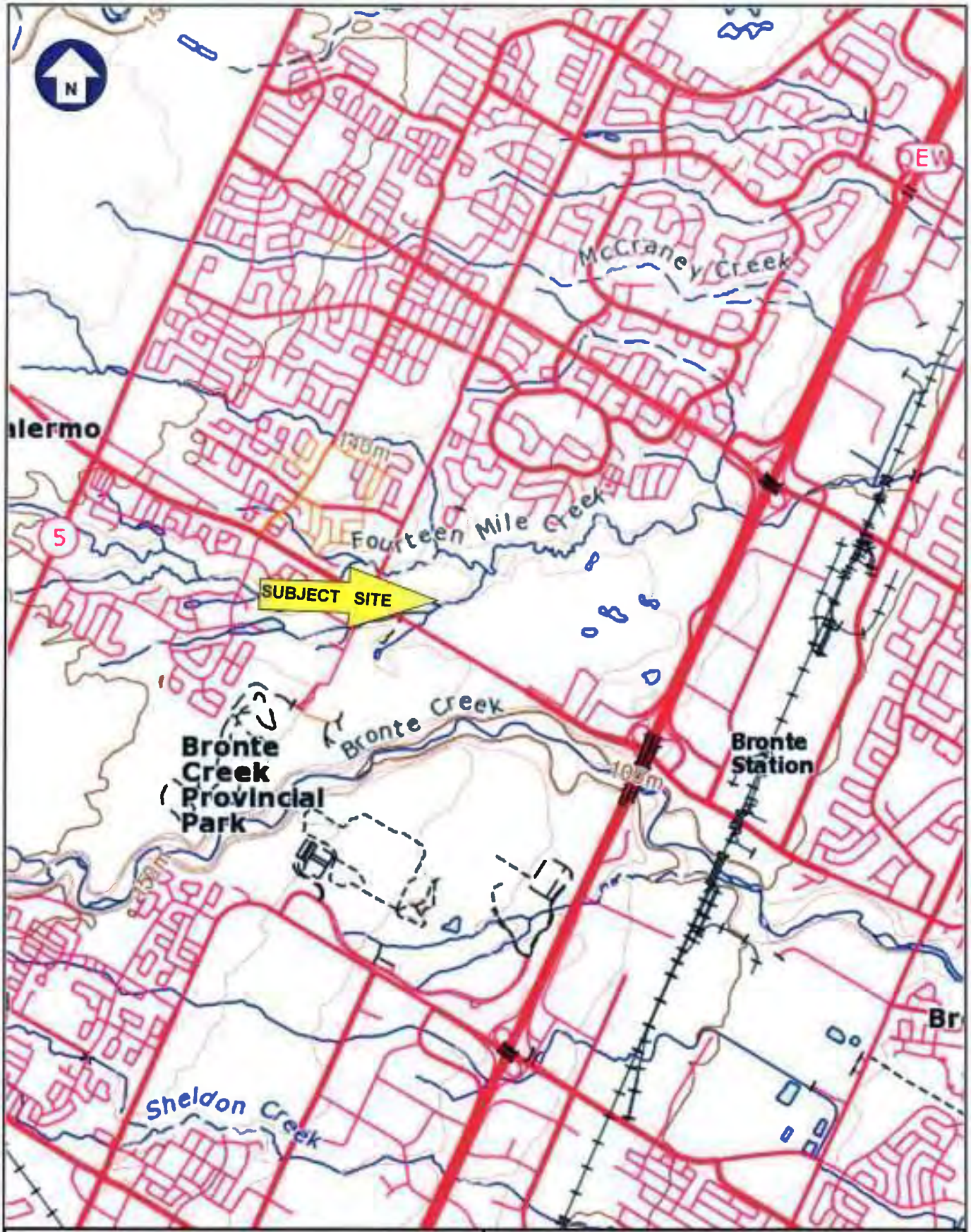
Report No. 2012-23820R

SOIL PROBE

Date	Scale	File No.	Drawing
APR. 2012	N.T.S.	SP-3256	1

DRAWING 2

TOPOGRAPHIC VIEW



TOPOGRAPHIC VIEW

1401 Bronte Road
Oakville, Ontario

Report No. 2012-23820R

SOIL PROBE

Date	Scale	File No.	Drawing
APR. 2012	N.T.S.	SP-3256	2

DRAWING 3

SITE PLAN

SITE PLAN

1401 Bronte Road
Oakville, Ontario

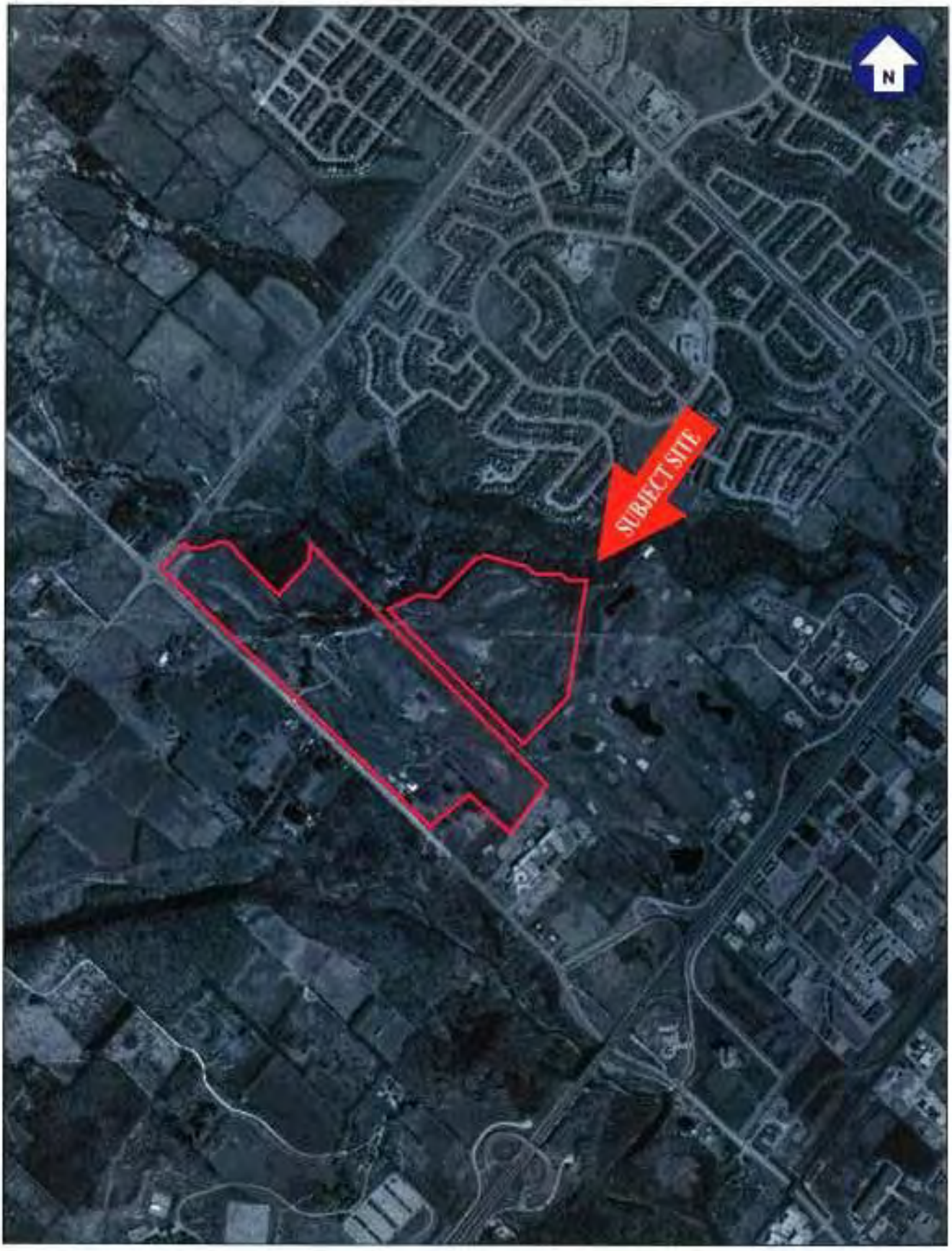
Report No. 2012-23820R

SOIL PROBE

Date	Scale	File No.	Drawing
APR. 2012	1: 6500	SP-3256	3

APPENDIX A
SITE PHOTOGRAPHS

Photograph 1 1995 Aerial Photograph of Golf Course Facility



Photograph 2 2000 Aerial Photograph of Golf Course Facility

Photograph 3 2010 Aerial Photograph of Golf Course Facility

Photograph 4 North View of *Saw-Whet Golf Course*

Photograph 5 South View of *Saw-Whet Golf Course*

Photograph 6 Front View of the Clubhouse Located at 1401 Bronte Road

Photograph 7 Rear View of the Clubhouse Located at 1401 Bronte Road

Photograph 8 Interior View of the Clubhouse

Photograph 9 Interior View of the Kitchen

Photograph 10 View of the Propane-Fired *Carrier* Furnace in the Basement

Photograph 11 View of the Electrical Equipment in the Basement

Photograph 12 Front View of the Office Building

Photograph 13 Interior View of the Office Building

Photograph 14 View of Gasoline AST on the Western Portion of the Site

Photograph 15 View of Propane AST on the Western Portion of the Site

Photograph 16 View of Maintenance Office Building

Photograph 17 Interior View of Maintenance Office Building

Photograph 18 View of Maintenance Building

Photograph 19 Interior View of Maintenance Building

Photograph 20 View of Maintenance Yard

Photograph 21 View of Diesel AST in Maintenance Yard

APPENDIX B
OLS LEGAL SURVEYS

PLAN 20R-6034

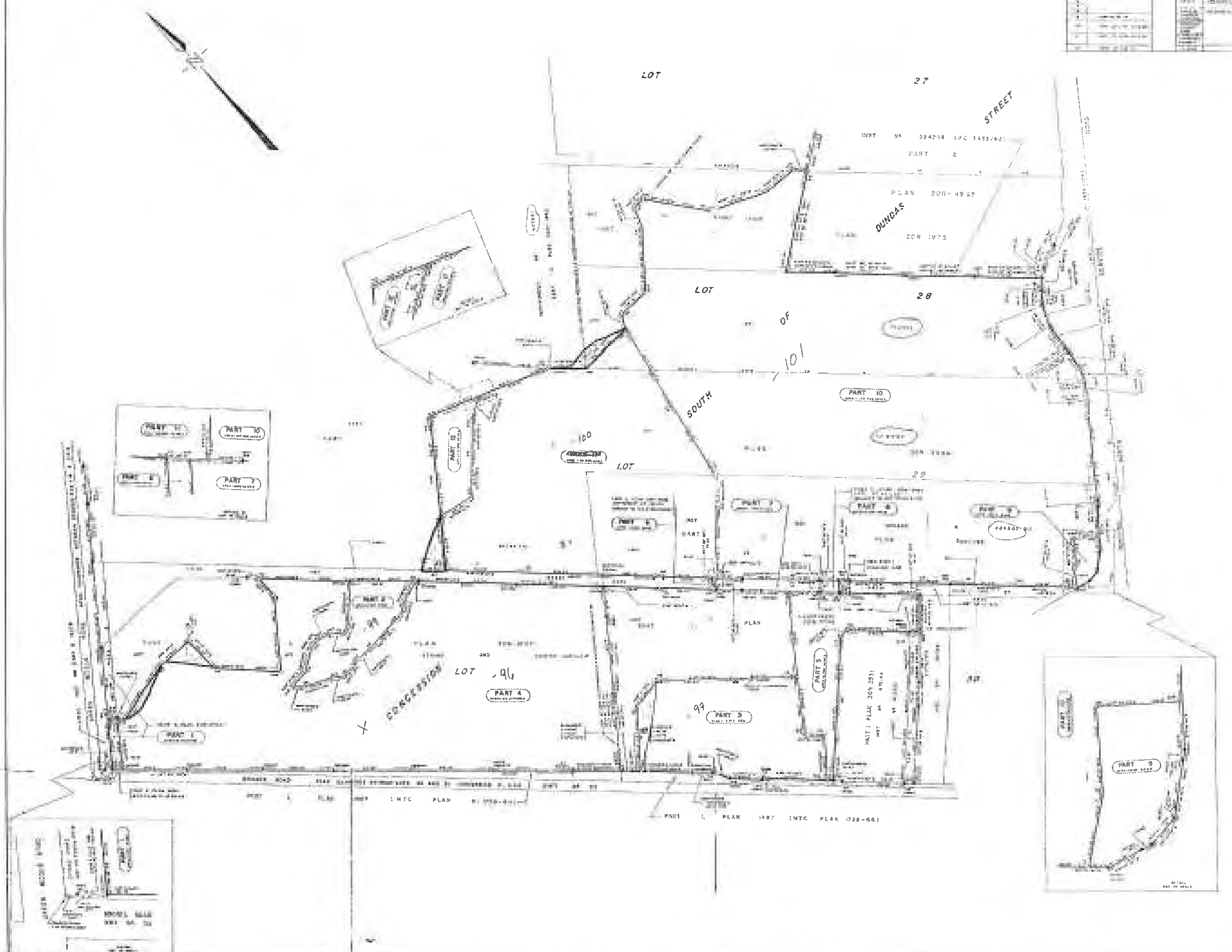
DATE 5 JAN 1983

PART OF LOTS 27, 28, 29 AND 30
CONCESSION 2 SOUTH OF DUNDAS STREET

COUNTY OF HALTON
NOW IN THE TOWN OF
OAKVILLE
REGIONAL MUNICIPALITY OF HALTON

1982

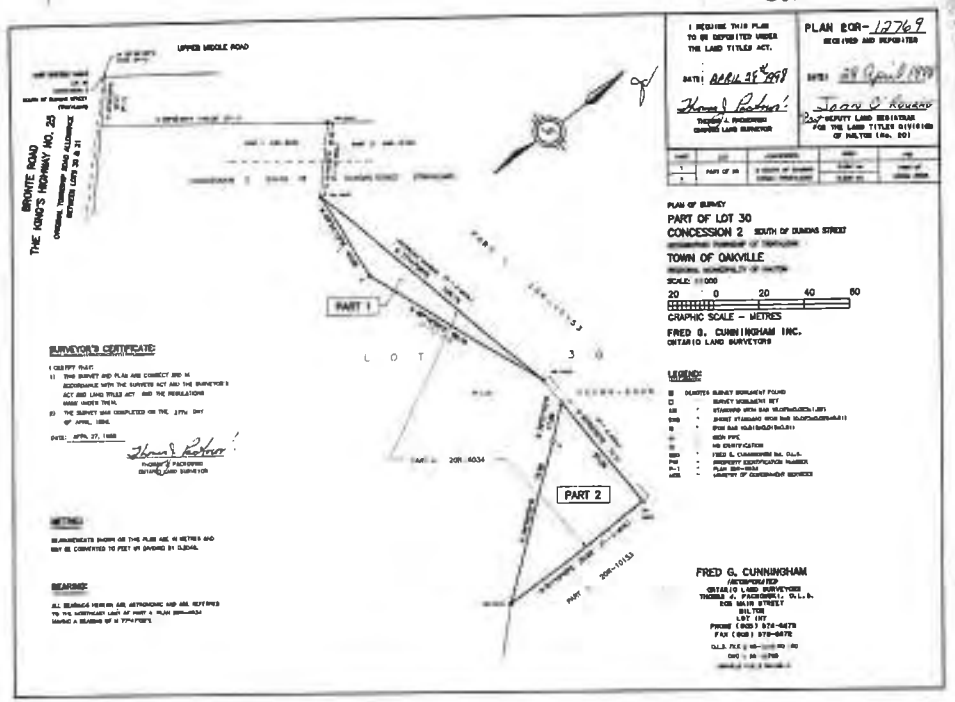
SURVEYOR'S CERTIFICATE

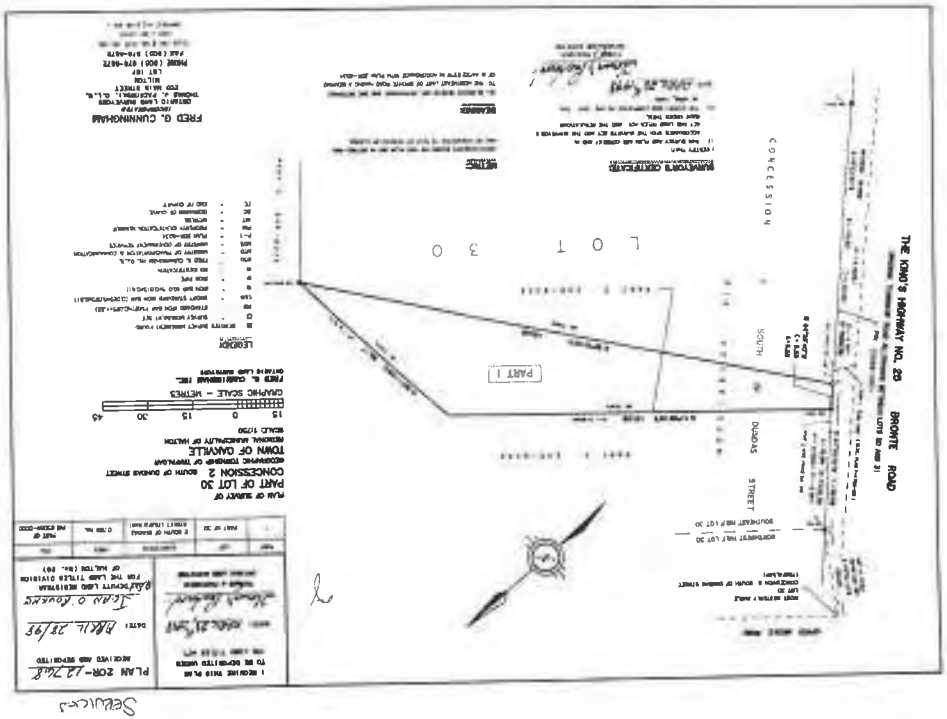


Survey Party Chief J. McGinnis
Drawn by M.L. Henderson
Examined by R. Morrison
MINISTRY OF GOVERNMENT SERVICES

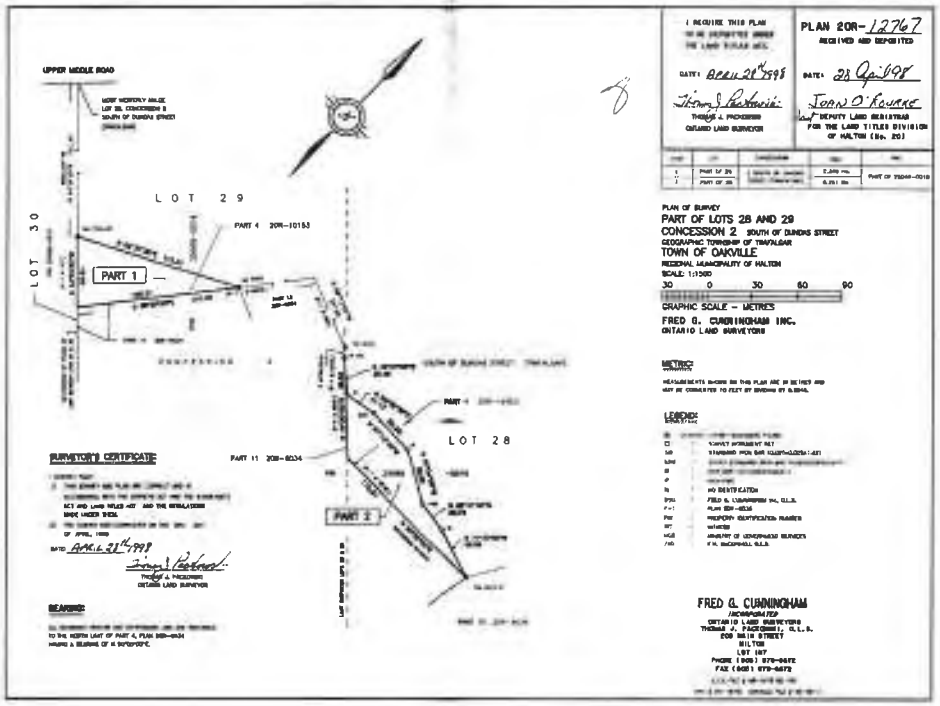
853-243 L

SERVICES





Services



APPENDIX C
LAND REGISTRY RECORDS

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #20

25069-0159 (LT)

PREPARED FOR AIMS ENVIRONMENTAL
ON 2012/03/28 AT 15:40:48

* CERTIFIED BY LAND REGISTRAR IN ACCORDANCE WITH LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LT 30, CON 2 TRAF SDS, PTS 1 & 4, 20R6034 S&E PTS 1 & 2 20R12769 & PT LT 30,CON 2 TRAF SDS, PT 1 20R12768 S&E PT 1 20R15746 & S&E PT 1, 20R18491 & PTS 1 & 2, 20R18624. T/W 412907 & 520140. S/T 74286. S/T EASE H840899 OVER PTS 12& 16 20R13352. S/T EASE HR70019 OVER PT 1 20R13608.; TOWN OF OAKVILLE

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
DIVISION FROM 25069-0129

PIN CREATION DATE:
2010/12/03

OWNERS' NAMES
SAW-WHET GOLF COURSE LTD.

CAPACITY SHARE
BENO

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 2010/12/03 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
**	SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES					
**	AND ESCHEATS OR FORFEITURE TO THE CROWN.					
**	THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF					
**	IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY					
**	CONVENTION.					
**	ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES					
**DATE OF CONVERSION TO LAND TITLES: 1996/05/27 **						
PM26	1957/03/08	PLAN MISCELLANEOUS				C
74286	1958/01/31	AGR RIGHT OF WAY			INTERPROVINCIAL PIPE LINE COMPANY	C
20R2090	1975/05/28	PLAN REFERENCE				C
20R3096	1977/04/26	PLAN REFERENCE				C
20R4707	1980/03/13	PLAN REFERENCE				C
20R6034	1983/01/05	PLAN REFERENCE				C
824285	1994/06/24	NOTICE				C
REMARKS: NOTICE OF CLAIM DOES NOT AFFECT HC402 DELETED 09/21/06						
20R12768	1998/04/28	PLAN REFERENCE				C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
H767360	1998/12/01	TRANSFER	$1,900,000	HER MAJESTY THE QUEEN, IN RIGHT OF ONTARIO AS REPRESENTED BY THE CHAIR OF THE MANAGEMENT BOARD O F CABINET	540129 ONTARIO LIMITED	C
	REMARKS: PLANNING ACT STATEMENTS					
H767361	1998/12/01	CHARGE	$1,000,000	540129 ONTARIO LIMITED	THE TORONTO-DOMINION BANK	C
20R13352	1999/09/29	PLAN REFERENCE				C
20R13422	1999/11/25	PLAN REFERENCE				C
H840899	2000/03/30	TRANSFER EASEMENT	$14,085	540129 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
H840900	2000/03/30	NOTICE AGREEMENT		540129 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
H840901	2000/03/30	POSTPONEMENT		THE TORONTO-DOMINION BANK	THE REGIONAL MUNICIPALITY OF HALTON	C
	REMARKS: H767361 TO H840899					
20R13608	2000/04/20	PLAN REFERENCE				C
HR70019	2001/08/30	TRANSFER EASEMENT	$8,250	540129 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
HR70020	2001/08/30	POSTPONEMENT		THE TORONTO-DOMINION BANK	THE REGIONAL MUNICIPALITY OF HALTON	C
	REMARKS: H767361 TO HR70019					
20R15746	2004/07/08	PLAN REFERENCE				C
HR305235	2004/07/23	APL CH NAME OWNER		540129 ONTARIO LIMITED	SAW-WHET GOLF COURSE LTD.	C
HR955484	2011/08/25	NOTICE	$2	SAW-WHET GOLF COURSE LTD.	THE TORONTO-DOMINION BANK	C
	REMARKS: H767361					

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #20

25069-0100 (LT)

PREPARED FOR AIMS ENVIRONMENTAL
ON 2012/03/28 AT 15:40:21

* CERTIFIED BY LAND REGISTRAR IN ACCORDANCE WITH LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LTS 28 & 29, CON 2 TRAF SDS, PT 11 20R6034 & PTS 1-2 20R12767; OAKVILLE. S/T EASE H840899 OVER PT 21 20R13352. S/T EASE HR70019 OVER PTS 3-4 20R13608.

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
DIVISION FROM 25069-0018

PIN CREATION DATE:
1999/01/08

OWNERS' NAMES
SAW-WHET GOLF COURSE LTD

CAPACITY SHARE
BENO

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1996/05/27 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1999/01/08						
*** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE: 1999/01/07 ***						
***SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:*						
*** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES*						
*** AND ESCHEATS OR FORFEITURE TO THE CROWN.*						
*** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF*						
*** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY*						
*** CONVENTION.*						
*** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES*						
***DATE OF CONVERSION TO LAND TITLES: 1996/05/27 ***						
77871	1958/04/25	AGREEMENT			THE CORPORATION OF THE TOWNSHIP OF TRAFALGAR	C
20R1199	1973/12/05	PLAN REFERENCE				C
Z559882	1982/07/06	REST COV APL ANNEX				C
20R6034	1983/01/05	PLAN REFERENCE				C
779022	1992/01/29	NOTICE			THE CORPORATION OF THE TOWN OF OAKVILLE	C
20R12767	1998/04/28	PLAN REFERENCE				C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

* CERTIFIED BY LAND REGISTRAR IN ACCORDANCE WITH LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
H767360	1998/12/01	TRANSFER	$1,900,000	HER MAJESTY THE QUEEN, IN RIGHT OF ONTARIO AS REPRESENTED BY THE CHAIR OF THE MANAGEMENT BOARD O F CABINET	540129 ONTARIO LIMITED	C
	REMARKS: PLANNING ACT STATEMENTS					
H767361	1998/12/01	CHARGE	$1,000,000	540129 ONTARIO LIMITED	THE TORONTO-DOMINION BANK	C
H773709	1999/01/26	CHARGE		*** DELETED AGAINST THIS PROPERTY *** 540129 ONTARIO LIMITED	PATTERSON, RAY PATTERSON, BERYL	
H773710	1999/01/26	CHARGE		*** COMPLETELY DELETED *** 540129 ONTARIO LIMITED	1023433 ONTARIO LIMITED	
H782334	1999/04/01	NOTICE OF LEASE		*** COMPLETELY DELETED *** 540129 ONTARIO LIMITED	ROGERS CANTEL INC	
20R13352	1999/09/29	PLAN REFERENCE				C
H840869	2000/03/30	APL CH NAME OWNER		*** COMPLETELY DELETED *** ROGERS CANTEL INC.	ROGERS WIRELESS INC.	
	REMARKS: LEASE - H782334					
H840899	2000/03/30	TRANSFER EASEMENT	$14,085	540129 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
H840900	2000/03/30	NOTICE AGREEMENT		540129 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
H840901	2000/03/30	POSTPONEMENT		THE TORONTO-DOMINION BANK	THE REGIONAL MUNICIPALITY OF HALTON	C
	REMARKS: H767361 TO H840899					
H840902	2000/03/30	POSTPONEMENT		*** DELETED AGAINST THIS PROPERTY *** PATTERSON, RAY PATTERSON, BERYL	THE REGIONAL MUNICIPALITY OF HALTON	
	REMARKS: H773709 TO H810899 H810899 S/B H840899					
H840903	2000/03/30	POSTPONEMENT		1023433 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
	REMARKS: H773710 TO H840899					
H840904	2000/03/30	POSTPONEMENT		*** COMPLETELY DELETED *** ROGERS WIRELESS INC.	THE REGIONAL MUNICIPALITY OF HALTON	
	REMARKS: H782334 TO H840869 & H840899					

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
20R13608	2000/04/20	PLAN REFERENCE				C
HR2264	2000/07/18	NO DET/SURR LEASE		*** COMPLETELY DELETED ***	ROGERS WIRELESS INC.	
	REMARKS: RE: H782334					
HR70019	2001/08/30	TRANSFER EASEMENT	$8,250	540129 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
HR70020	2001/08/30	POSTPONEMENT		THE TORONTO-DOMINION BANK	THE REGIONAL MUNICIPALITY OF HALTON	C
	REMARKS: H767361 TO HR70019					
HR70021	2001/08/30	POSTPONEMENT		*** DELETED AGAINST THIS PROPERTY *** PATTERSON, RAY PATTERSON, BERYL	THE REGIONAL MUNICIPALITY OF HALTON	
	REMARKS: H773702 TO HR70019					
HR70022	2001/08/30	POSTPONEMENT		1023433 ONTARIO LIMITED	THE REGIONAL MUNICIPALITY OF HALTON	C
	REMARKS: H773710 TO HR70019					
HR305235	2004/07/23	APL CH NAME OWNER		540129 ONTARIO LIMITED	SAW-WHET GOLF COURSE LTD.	C
HR305244	2004/07/23	APL (GENERAL)		*** COMPLETELY DELETED *** SAW-WHET GOLF COURSE LTD.		
	REMARKS: DELETE H773710					
HR396824	2005/07/27	CONSTRUCTION LIEN		*** COMPLETELY DELETED *** STF CONSTRUCTION LTD.		
HR408644	2005/09/01	CERTIFICATE		*** COMPLETELY DELETED *** STF CONSTRUCTION LTD.		
	REMARKS: HR396824					
HR463866	2006/03/24	APL AMEND ORDER		*** COMPLETELY DELETED *** ONTARIO SUPERIOR COURT OF JUSTICE	SAW-WHET GOLF COURSE LTD.	
	REMARKS: DELETE HR396824					
HR535630	2006/12/21	APL AMEND ORDER		*** COMPLETELY DELETED *** ONTARIO SUPERIOR COURT OF JUSTICE	SAW-WHET GOLF COURSE LTD.	
	REMARKS: DELETE HR408644					

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
HR892551	2010/11/26	APL OF SURV-CHRG		*** COMPLETELY DELETED *** PATTERSON, BERYL	PATTERSON, RAY	
	REMARKS: H773707.					
HR892580	2010/11/26	DISCH OF CHARGE		*** COMPLETELY DELETED *** PATTERSON, JENNIFER SUZANNE		
	REMARKS: H773707.					
HR955484	2011/08/25	NOTICE	$2	SAW-WHET GOLF COURSE LTD.	THE TORONTO-DOMINION BANK	C
	REMARKS: H767361.					

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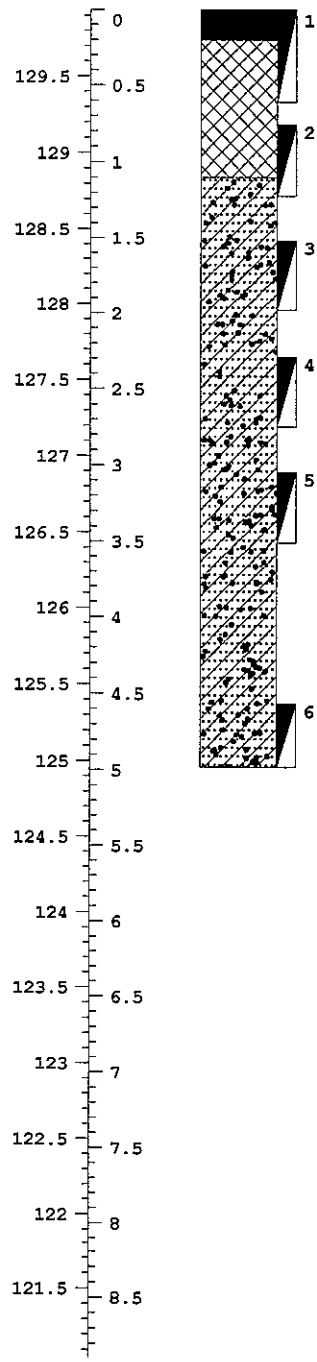
APPENDIX D

SPL GEOTECHNICAL BOREHOLE LOGS

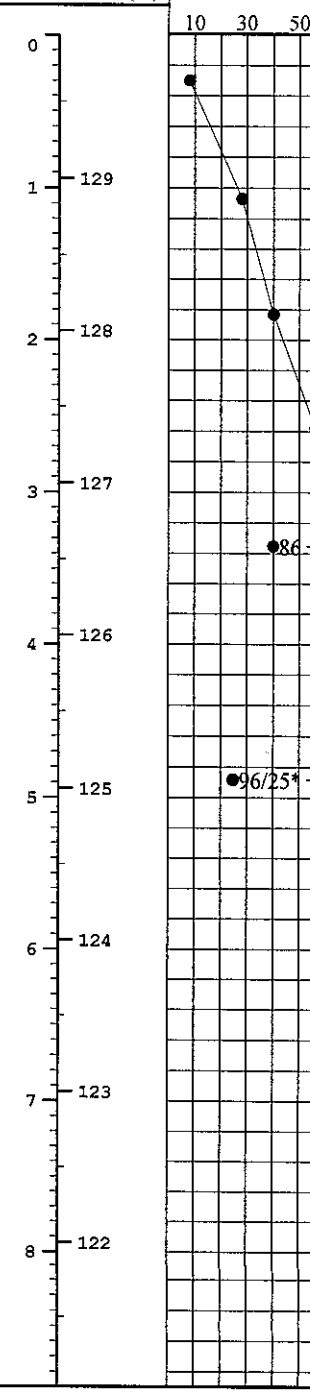
BOREHOLE LOG
BOERHOLE NO.: 1

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 129.94
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 2, 2012
WATER LEVEL DEPTH (m):
M.C. = Natural Moisture Content



DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)
TOPSOIL - about 200 mm thick			
FILL - brown to mixed brown-red clayey silt with some sand, occasional pockets of topsoil (upper 300 mm or so) , moist	22.6	8	
CLAY SILT TILL - with some sand, trace of gravel, grayish brown, moist, hand.	13.3	28	
	12.3	40	
	12.8	56	
	8.9	86	
- colour changes to brownish grey below about 4.0 m			
End of Borehole @ 4.98 m Borehole dry on completion	7.5	96/ 25*	
96/25* = 96 blows for 25 cm of sampler penetration after 1st 15 cm			



Enclosure No. 1

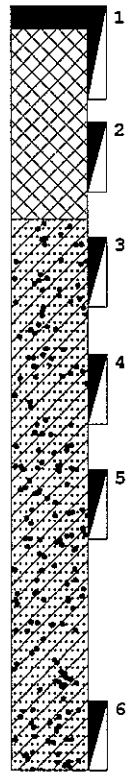
SOIL PROBE LTD.

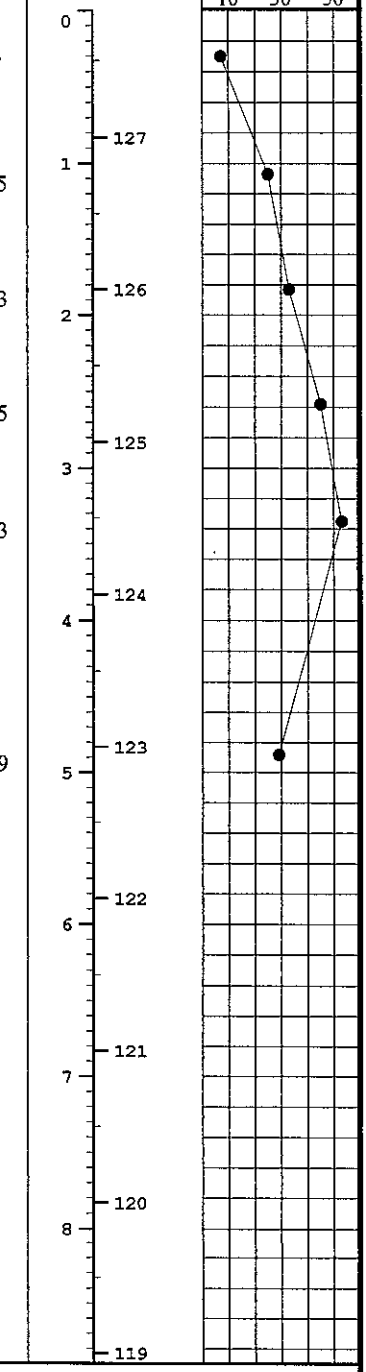
BOREHOLE LOG
BOERHOLE NO.: 2

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 127.83
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 2, 2012
WATER LEVEL DEPTH (m):
M.C. = Natural Moisture Content

ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)	CURVE N (Blows/0.3m)
127.5 / 0	1	TOPSOIL - about 150 mm thick (Non-play area with surficial grass)	22.5	7		
127 / 0.5	2	FILL - brown clayey silt with traces of sand & gravel, pockets of topsoil, moist	13.9	25		
126.5 / 1	3	CLAYEY SILT TILL - trace of sand & gravel, grayish brown, moist, hand	13.4	33		
126 / 1.5		- colour changes to brownish gray below about 2.1 m				
125.5 / 2	4		11.8	45		
125 / 2.5	5		11.0	53		
124.5 / 3						
124 / 3.5	6	- colour changes to gray below about 4.7 m	11.5	29		
123.5 / 4		End of Borehole @ 5.03 m Borehole dry on completion				
123 / 4.5						
122.5 / 5						
122 / 5.5						
121.5 / 6						
121 / 6.5						
120.5 / 7						
120 / 7.5						
119.5 / 8						
119 / 8.5						





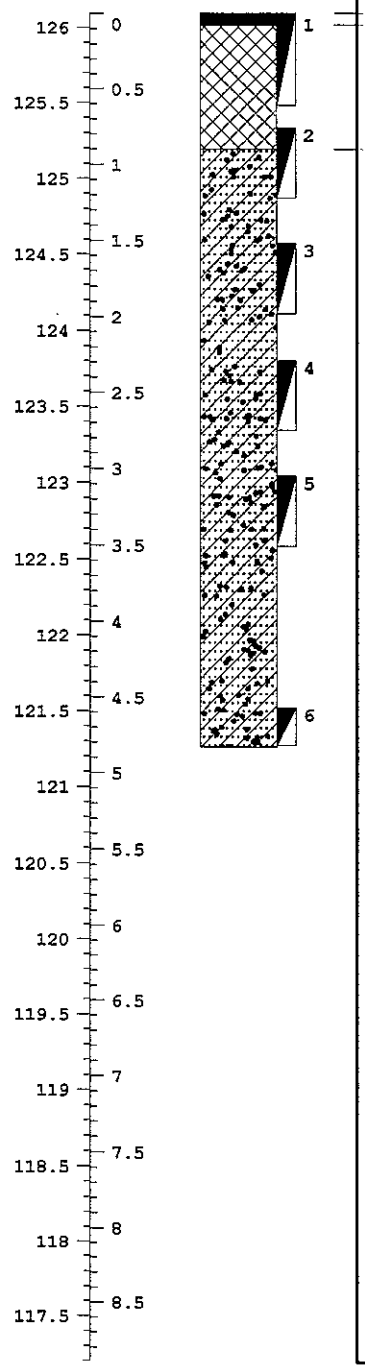
Enclosure No. 2

SOIL PROBE LTD.

BOREHOLE LOG
BOERHOLE NO.: 3

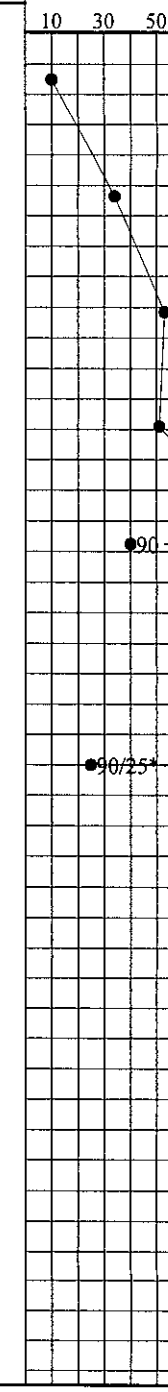
PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 126.09
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 2, 2012
WATER LEVEL DEPTH (m):
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)
126 / 0	1	TOPSOIL - about 75 mm thick (thick surficial grass present)			
125.5 / 0.5		FILL - brown clayey silt with some sand and fine gravel, moist	20.7	10	
125 / 1	2	CLAYEY SILT TILL - traces of sand & gravel, grayish brown to brown, moist, hard	13.1	34	
124.5 / 1.5	3	- includes some medium gravel below about 1.8 m	10.3	53	
124 / 2					
123.5 / 2.5	4		6.8	51	
123 / 3	5		7.2	90	
122.5 / 3.5					
122 / 4					
121.5 / 4.5	6				
121 / 5		End of Borehole @ 4.83 m Borehole dry on completion	7.6	90/ 25*	
120.5 / 5.5					
120 / 6					
119.5 / 6.5					
119 / 7					
118.5 / 7.5					
118 / 8					
117.5 / 8.5					

CURVE N (Blows/0.3m)



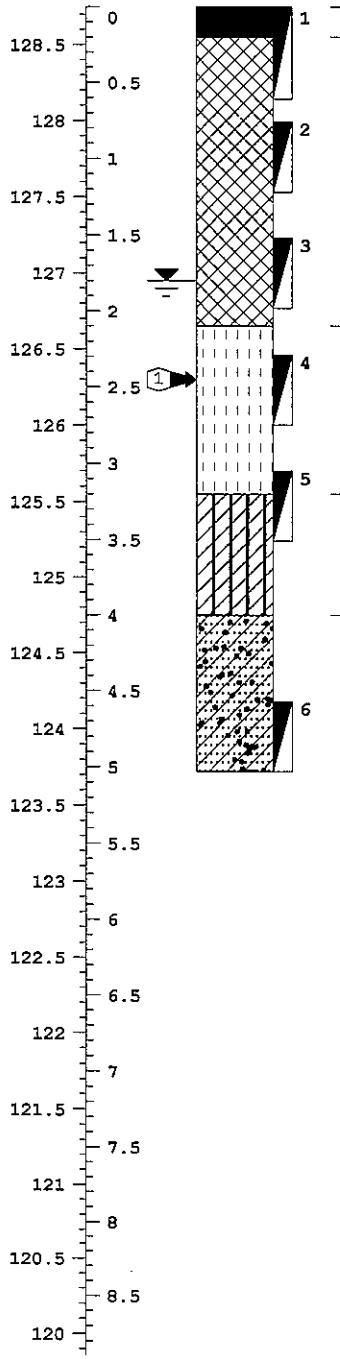
Enclosure No. 3

SOIL PROBE LTD.

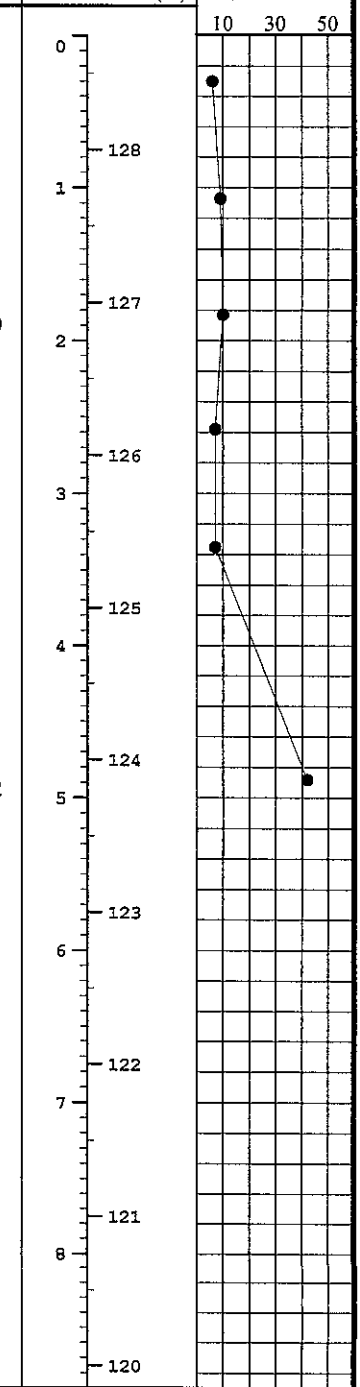
BOREHOLE LOG
BOERHOLE NO.: 4

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 128.75
CAVED AT DEPTH (m): 2.45
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 3, 2012
WATER LEVEL DEPTH (m): 1.8
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	STANDARD PENETRATION TEST DEPTH/ ELEVATION (m)
		TOPSOIL - about 200 mm thick			
		FILL - brown, sand-silt-clay with trace fine gravel, moist	15.2	6	
			14.2	9	
		- layer of brown wet silty sand with trace of plant remains below about 1.4 m	19.9	10	
		POSSIBLE FILL - brown fine sand, wet	24.8	7	
		CLAYEY SILT - grey, wet, firm	20.2	7	
		CLAYEY SILT TILL - traces of sand and gravel, gray, moist, hand.			
		End of Borehole @ 5.03 m	12.3	42	
		Water level @ 1.8 m in piezometer on installation and			



Standpipe piezometer installed in borehole

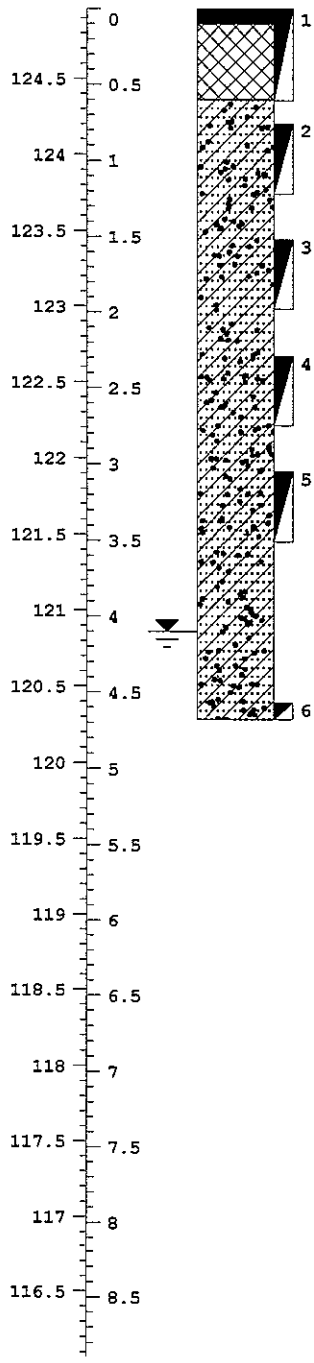
Enclosure No. 4

SOIL PROBE LTD.

BOREHOLE LOG
BOERHOLE NO.: 5

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 124.96
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 3, 2012
WATER LEVEL DEPTH (m): 4.1
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)	CURVE N (Blows/0.3m)
		TOPSOIL - about 100 mm thick (root mat) (Surficial grass present)				
		FILL - brown clayey silt with trace gravel, moist	22.5	10		
		CLAYEY SILT TILL - traces of sand and gravel, reddish brown, moist, hard	12.6	33		
		- includes some coarse gravel below about 1.8 m	8.9	76		
		- colour changes to reddish grey below about 2.4 m	9.2	50/ 10*		
			7.5	50/ 13+		
		End of borehole @ 4.68 m Water level @ 4.1 m on drilling completion	8.1	50/ 11+		

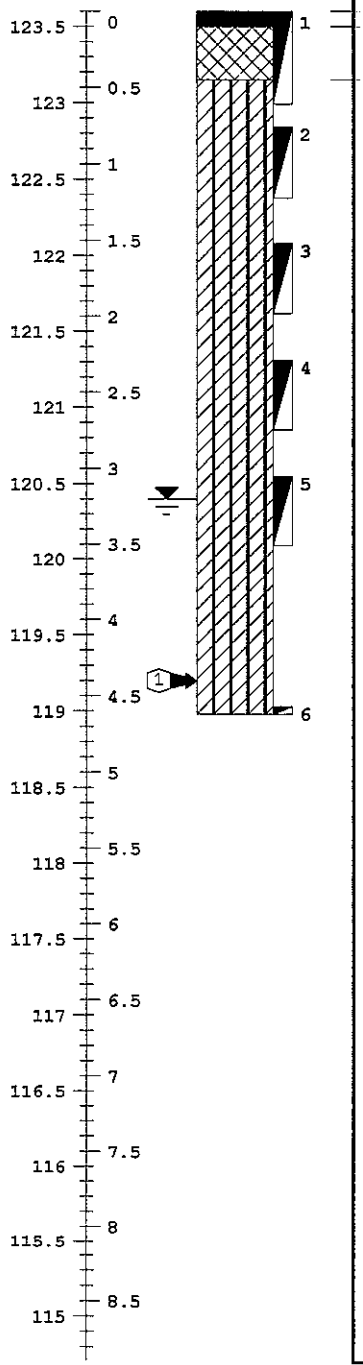
Enclosure No. 5

SOIL PROBE LTD.

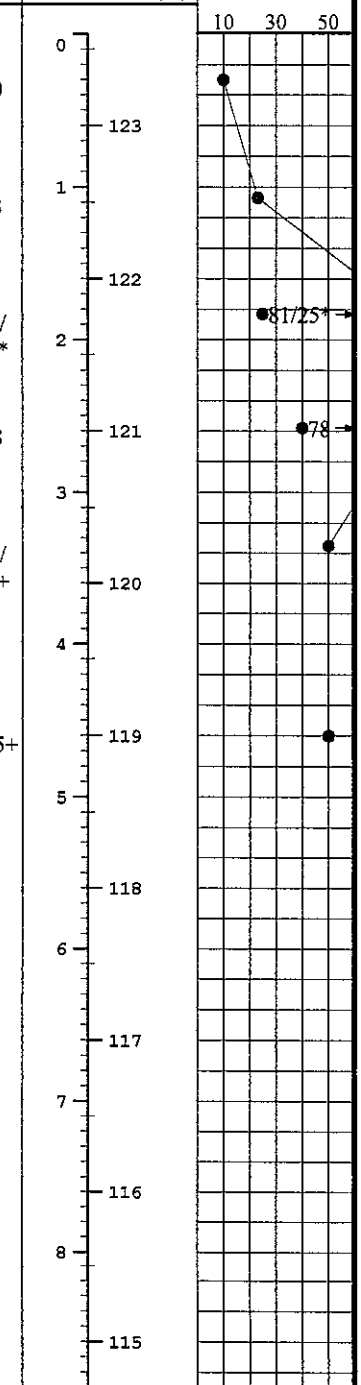
BOREHOLE LOG
BOERHOLE NO.: 6

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 123.6
CAVED AT DEPTH (m): 4.4
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 3, 2012
WATER LEVEL DEPTH (m): 3.2
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	STANDARD PENETRATION TEST DEPTH/ ELEVATION (m)
		TOPSOIL - about 100 mm thick (Thick surficial grass present)			
		FILL - reddish brown, clayey silt with some roots, moist	21.2	10	
		CLAYEY SILT - red (with occasional grey lense), moist, stiff	12.1	23	
		- becomes hard below about 1.4 m	9.0	81/ 25*	
		- thin lense of hard grey silty clay at about 2.7 m	7.3	78	
		- becomes wet below about 4.0 m	8.6	50/ 10+	
		End of Borehole @ 4.62 m Water Level @ 3.2 m on completion drilling	22.2	50/5+	



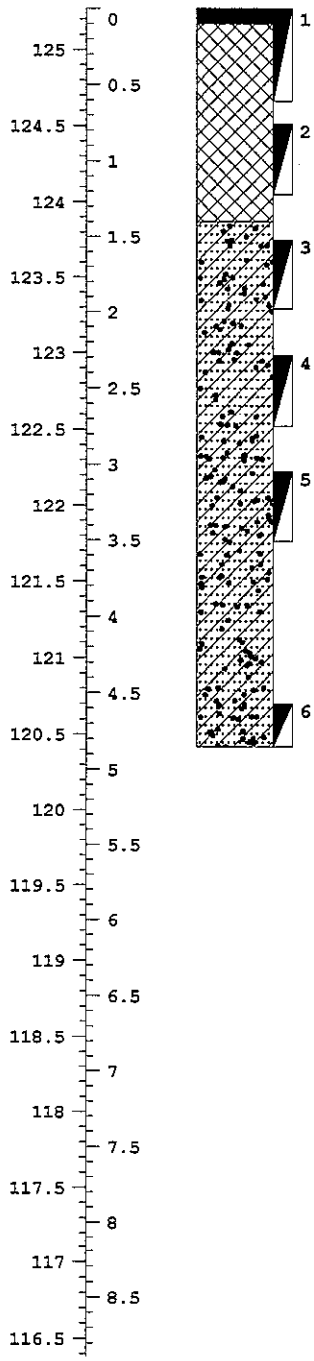
Enclosure No. 6

SOIL PROBE LTD.

BOREHOLE LOG
BOERHOLE NO.: 7

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 125.27
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 2, 2012
WATER LEVEL DEPTH (m):
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)	CURVE N (Blows/0.3m)
125 / 0	1	TOPSOIL - about 100 mm thick (root mat)				
124.5 / 0.5	1	FILL - brown clayey silt with some pockets of topsoil, moist	30.6	7		
124 / 1	2		28.5	21		
123.5 / 1.5	3	CLAYEY SILT TILL - trace fine gravel, reddish brown with some grey spots, moist, very stiff				
123 / 2	3	- includes some medium gravels below about 1.8 m	13.1	27		
122.5 / 2.5	4	- becomes hard below about 2.1 m	11.7	35		
122 / 3	5		10.1	50/ 13*		
121.5 / 3.5						
121 / 4						
120.5 / 4.5	6	- sand-gravel seam at about 4.7 m	6.5	50/ 13*		
120 / 5		End of Borehole @ 4.85 m				
119.5 / 5.5		Borehole dry on completion				
119 / 6		50/13* = 50 blows for 13 cm of sampler penetration after 1st 15 cm				
118.5 / 6.5						
118 / 7						
117.5 / 7.5						
117 / 8						
116.5 / 8.5						

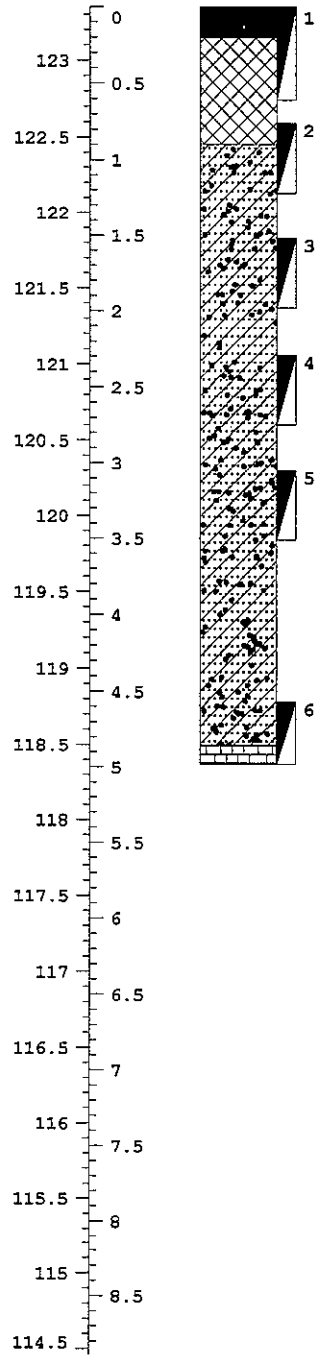
Enclosure No. 7

SOIL PROBE LTD.

BOREHOLE LOG
BOERHOLE NO.: 8

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 123.35
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 3, 2012
WATER LEVEL DEPTH (m):
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)	CURVE N (Blows/0.3m)
123 / 0	1	TOPSOIL - about 150 mm thick				
122.5 / 0.5		FILL - brown clayey silt with some fine gravel, moist	14.4	9		
122 / 1	2	CLAYEY SILT TILL - trace to some sand, reddish brown, moist, very stiff	13.3	22		
121.5 / 1.5	3	- becomes hard & includes occasional layer of gray silt below about 1.8 m	13.3	36		
121 / 2	4	- colour changed to red below about 2.3 m	12.2	44		
120.5 / 2.5						
120 / 3	5		10.2	58		
119.5 / 3.5						
119 / 4						
118.5 / 4.5	6					
118 / 5		LIMESTONE- highly weathered, gray	9.3	73/ 25*		73/25*
117.5 / 5.5		End of Borehole @ 4.98 m Borehole dry on completion				
117 / 6		73/25* = 73 blows for 25 cm of sampler penetration after 1st 15 cm				
116.5 / 6.5						
116 / 7						
115.5 / 7.5						
115 / 8						
114.5 / 8.5						

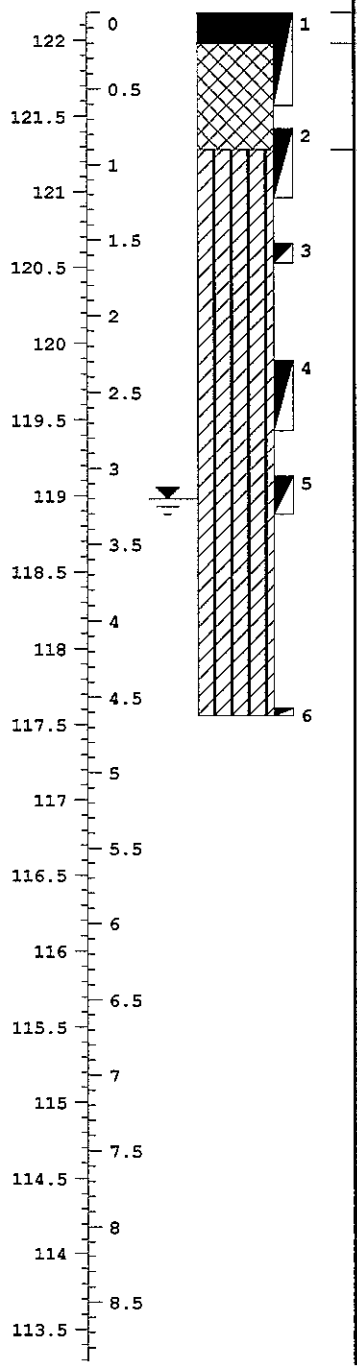
Enclosure No. 8

SOIL PROBE LTD.

BOREHOLE LOG
BOERHOLE NO.: 9

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 122.18
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 3, 2012
WATER LEVEL DEPTH (m): 3.2
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)	CURVE N (Blows/0.3m)
		TOPSOIL - about 200 mm thick (Green grassy Play area)	22.9	6		
		FILL - brown clayey silt, moist				
		CLAYEY SILT - red, moist, hard	20	43		
		- lense of grey hard silty clay at about 1.65 m	10.1	50/5+		
			9.8	49		
			8.8	50/ 10*		
		- becomes wet below about 4.0 m				
		End of Borehole @ 4.62 m	12.0	50/5+		
		Water Level @ 3.2 m on completion of drilling				
		50/13+ = 50 blows for 13 cm of sampler penetration 50/10* = 50 blows for 10 cm of sampler penetration after 1st 15 cm				

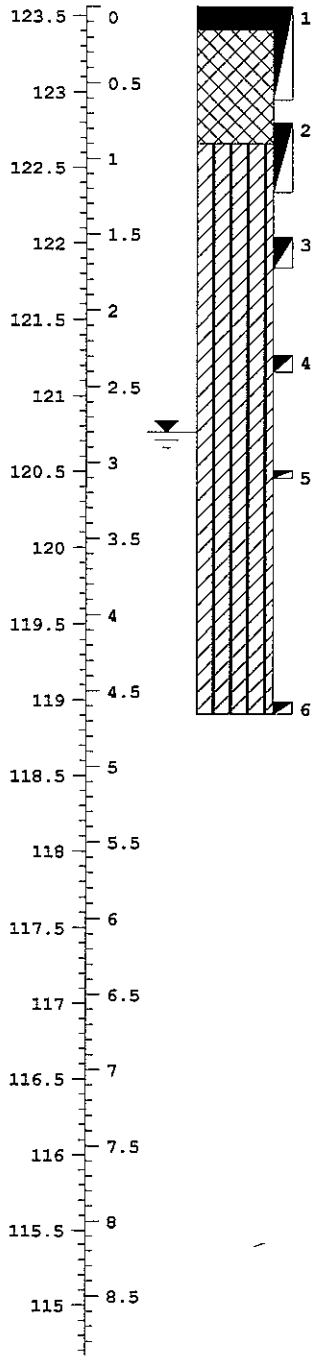
Enclosure No. 9

SOIL PROBE LTD.

BOREHOLE LOG
BOERHOLE NO.: 10

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 123.56
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 3, 2012
WATER LEVEL DEPTH (m): 2.8
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)	CURVE N (Blows/0.3m)
		TOPSOIL - about 150 mm thick (root mat) (Green grassy play area)				
		FILL - red clayey silt, moist	19.1	9		
		CLAYEY SILT - red (some hard grey spots), moist to damp, hand	8.1	48		
			5.9	50/5*		
			7.1	50/ 11+		
		- wet layer at about 2.9 m	17.6	50/5+		
		- lense of moderately weathered limestone at about 3.3 m				
		- wet red clayey silt layer at about 4.0 m				
		End of Borehole @ 4.65 m	8.6	50/8+		
		50/5* = 50 blows for 5 cm of sampler penetration after 1st 15 cm				
		50/11+ = 50 blows for 11 cm of sampler penetration				
		Water @ 2.74 m on completion of drilling				

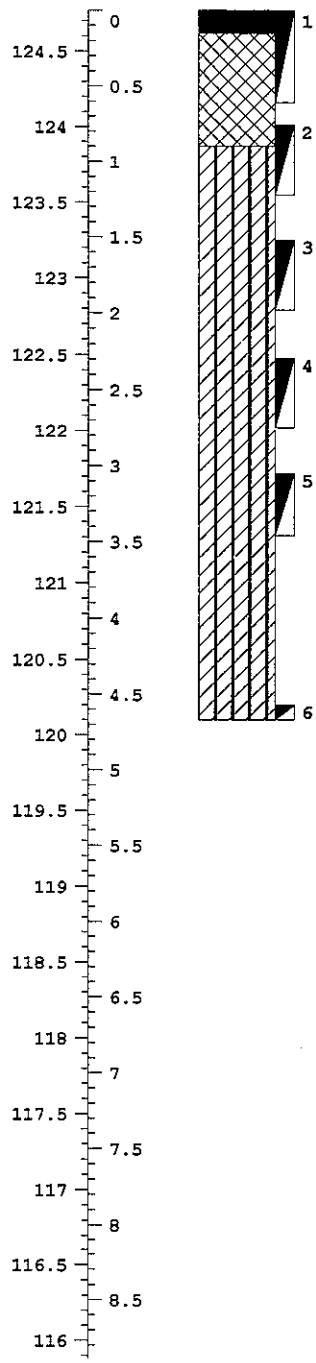
Enclosure No. 10

SOIL PROBE LTD.

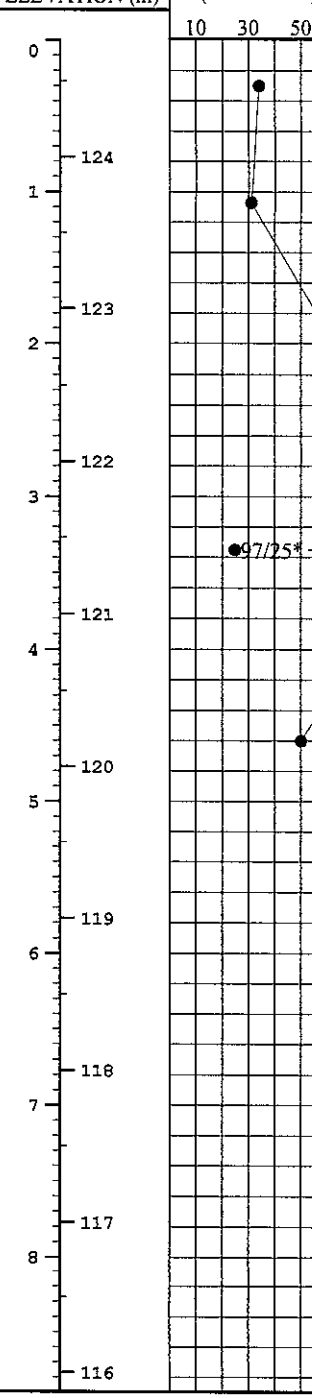
BOREHOLE LOG
BOERHOLE NO.: 11

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 124.77
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 3, 2012
WATER LEVEL DEPTH (m):
M.C. = Natural Moisture Content



DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	DEPTH/ ELEVATION (m)
TOPSOIL - about 150 mm thick (root mat) (Green grassy play area)			
FILL - red clayey silt with some stone pieces, moist.	15.2	34	
CLAYEY SILT - red with some grey spots to layers, wet, moist damp, hard	15.4	31	
	9.9	57	
	9.8	58	
- grey moderately weathered limstone lense at about 3.3 m	8.9	97/ 25*	
End of Borehole @ 4.67 m 97/25* = 97 blows for 25 cm of sampler penetration after 1st 15 cm 50/10+ = 50 blows for 10 cm of sampler penetration Borehole dry on completion	6.8	50/ 10+	



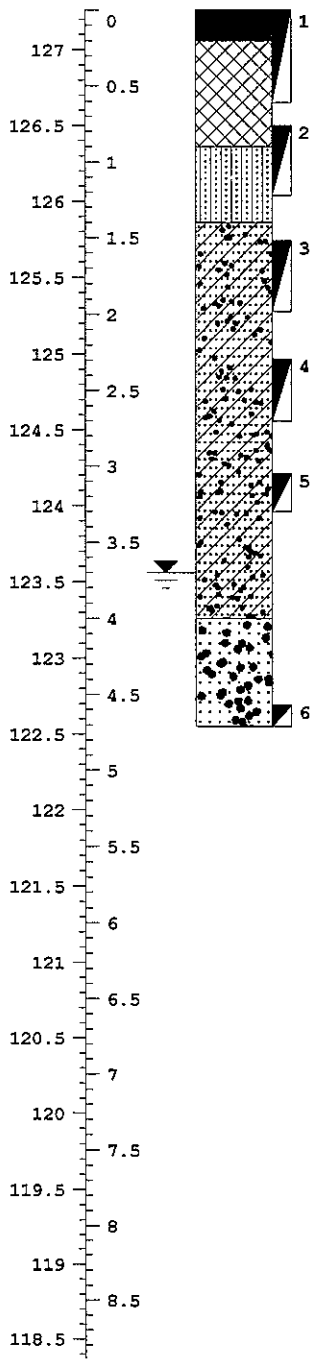
Enclosure No. 11

SOIL PROBE LTD.

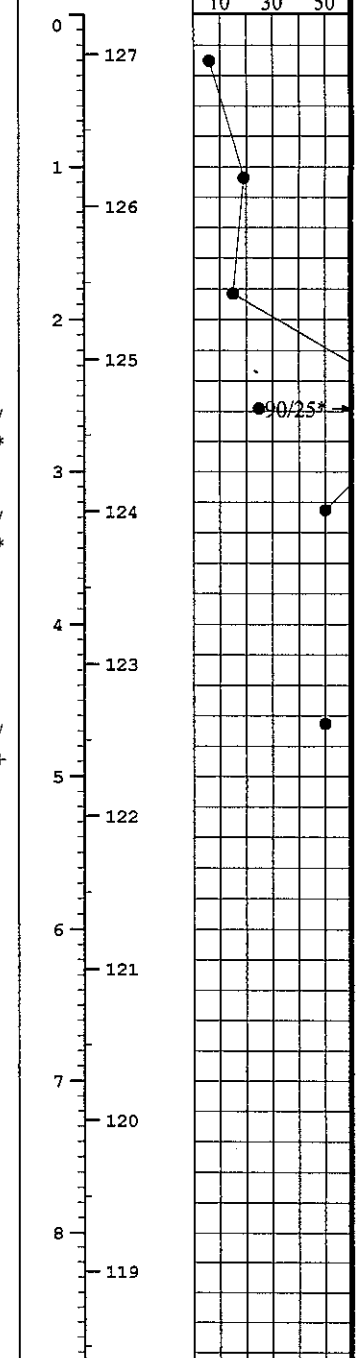
BOREHOLE LOG
BOERHOLE NO.: 12

PROJECT: Proposed Residential Subdivision
LOCATION: 1401 Bronte Road, Oakville, Ontario
ELEVATION (m) 127.26
CAVED AT DEPTH (m):
N=Blow Count in Standard Penetration Test (Blows/0.3m)

PROJECT NO.: SP-3256
DATE: April 2, 2012
WATER LEVEL DEPTH (m): 3.7
M.C. = Natural Moisture Content



ELEVATION/ DEPTH (m)	SOIL SYMBOLS	DESCRIPTION	M.C. %	STANDARD PENETRATION TEST N	STANDARD PENETRATION TEST DEPTH/ ELEVATION (m)
		TOPSOIL - about 200 mm thick (root mat) (Thick green grasse play area)			
		FILL - brown sand-silt-clay, moist	16.7	6	
		SILTY VERY FINE SAND - brown, wet, compact	20.8	19	
		CLAYEY SILT TILL - trace of sand, brown, moist, stiff	18.0	15	
		- wet seam at about 2.1 m			
		- includes some coarse gravel, becomes hard and color changes to brownish grey below about 2.5 m	12.9	90/ 25*	
			8.9	50/ 10*	
		SAND-GRAVEL - brownish grey, wet to very moist, very dense			
		End of Borehole @ 4.71 m Water Level @ 3.7 m on completion drilling 90/25* = 90 blows for 25 cm of sampler penetration after 1st 15 cm 50/14+ = 50 blows for 14 cm of sampler penetration	9.6	50/ 14+	



Enclosure No. 12

SOIL PROBE LTD.

KEY TO SYMBOLS

Enclosure No.: 13
File No.: SP- 3256
Report No.: 2012-23813

Symbol Description

Strata symbols


Topsoil


Sand-gravel


Fill


Cave-in Level


Clayey Silt Till


Water Level


Possible Fill


Clayey Silt


Limestone


Silty sand

Notes:

TERMS DESCRIBING RELATIVE DENSITY, BASED ON STANDARD PENETRATION TEST N-VALUE FOR COARSE GRAINED SOILS (major portion retained on No.200 sieve).

DESCRIPTIVE TERM	"N"-VALUE (blows/0.3m)	RELATIVE DENSITY (%)
Very Loose	< 4	< 15
Loose	4 to 10	15 to 35
Compact or Medium	10 to 30	35 to 65
Dense	30 to 50	65 to 85
Very Dense	> 50	> 85

TERMS DESCRIBING CONSISTENCY, BASED ON STANDARD PENETRATION TEST N-VALUE, FOR FINE GRAINED SOILS (major portion passing No. 200 sieve)

DESCRIPTIVE TERM	UNCONFINED COMPRESSIVE STRENGTH(kPa)	"N"-VALUE (blows/0.3m)
Very Soft	< 25	< 2
Soft	25 to 50	2 to 4
Firm	50 to 100	4 to 8
Stiff	100 to 200	8 to 15
Very Stiff	200 to 400	15 to 30
Hard	> 400	> 30

APPENDIX E

TOWN OF OAKVILLE CORRESPONDENCE

OAKVILLE

April 16, 2012

Miss Sarah Sipak
AIMS Evironmental
1020 Denison Street
Markham, ON L3R 3W5

Dear Miss Sipak:

Re: Freedom of Information Request 2012-0017
Decision Letter

Your request under the *Municipal Freedom of Information and Protection of Privacy Act (MFIPPA)* was to receive copy of any of the following records pertaining to 1401 Bronte Road, Saw-Whet Golf Course;

- Violation notices;
- Control orders;
- Environmental records.

Please be advised that access cannot be provided as no records exist.

You may request that this decision be reviewed by The Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, Ontario, M4W 1A8, Telephone: (416) 326-3333 or toll free 1-800-387-0073. Please note that you have 30 days from the receipt of this letter to request a review of the fee estimate. If you decide to request a review of this fee estimate, please provide the Commissioner's office with the following:

- the file numbers listed at the beginning of this letter;
- a copy of this letter;
- copies of the original requests for information you sent to our institution;
- the reasons why you believe the records exist (if the decision was that no records exist).

If you have any questions or concerns, you can reach me at 905-815-6053.

Yours truly,

Town of Oakville | 1225 Trafalgar Road, Oakville, Ontario L6H 0H3 | 905-845-6601 | www.oakville.ca

Tim Tucker
Records & Freedom of Information Officer

c. Cathie L. Best, Town Clerk
Vicki Tytaneck, Assistant Clerk

APPENDIX F

MOE FREEDOM OF INFORMATION REQUEST

Ministry of the Environment

Freedom of Information and Protection of Privacy Office

12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285

Ministère de l'Environnement

Bureau de l'accès à l'information et de la protection de la vie privée

12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075
Téléc. : (416) 314-4285

Ontario

April 12, 2012

Sarah Sipak
AIMS Environmental
111 - 1020 Denison St
Markham, ON L3R 3W5

Dear Sarah Sipak:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2012-01808, Your Reference AR129-12

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of $5.00 (non-refundable application fee), along with your $30.00 deposit.

The search is being conducted on the following: 1401 Bronte Road, Oakville. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search and preparation time and photocopying.

If you have any questions regarding this matter, please contact Liz Mico at (416) 212-0559.

Yours truly,

Heidi Ritscher
FOI Manager

Ontario Ministry of the Environment

Freedom of Information Request

This form is for requesting documents which are in the Ministry's files on environmental concerns related to properties.
Please refer to the guide on completion and use of this form. Our fax no. is (416) 314-4285.

Requester Data

Name, Company Name, Mailing Address and Email Address of Requester

Sarah Sipak
AIMS ENVIRONMENTAL
1020 DENISON STREET Suite 111
Markham, Ontario L3R 3W5

Email address:

Telephone/Fax Nos.
Tel. 905-474-0058 x.107
Fax 905-474-0601

Your Project/Reference No.
AR129-12

Signature /Print /Name of Requester
Sipak

For Ministry Use Only

FOI Request No.

Date Request Received

Fee Paid

a ACCT a CHQ a VISA/MC a CASH

a CNR a ER a NOR a SWR a WCR
a SAC a IEB a EAA a EMR a SWA

Request Parameters

Municipal Address / Lot, Concession, Geographic Township **(Municipal address essential for cities, towns or regions)**
1401 Bronte Road, Oakville

Present Property Owner(s) and Date(s) of Ownership
Saw-Whet Golf Course Ltd.(formerly 540129 Ontario Limited) (1998/12/01)

Previous Property Owner(s) and Date(s) of Ownership
Her Majesty the Queen (Prior to 1998)

Present/Previous Tenant(s),(if applicable)
Saw-Whet Golf Course

Search Parameters *Files older than 2 years may require $60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.*	**Specify Year(s) Requested**
Environmental concerns (General correspondence, occurrence reports, abatement)	ALL YEARS
Orders	1986 - present
Spills	1986 - present
Investigations/prosecutions Owner **AND** Tenant information must be provided	1986 - present
Waste Generator number/classes	1986 - present

Certificates of Approval Proponent information must be provided

1985 and prior records are searched manually. Search fees in excess of $300.00 could be incurred, depending on the types and years to be searched.
Specify Certificates of Approval number(s) (if known). **If supporting documents are also required, mark SD box** and specify type, e.g. maps, plans, reports, etc.

	SD	**Specify Year(s) Requested**
air - *emissions*		
water - *mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)*		
sewage - *sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations*		
waste water - *industrial discharges*		
waste sites - *disposal, landfill sites, transfer stations, processing sites, incinerator* sites		1986 - present
waste systems - *PCB destruction, mobile waste processing units, haulers: sewage, non-hazardous & hazardous waste*		
pesticides - *licenses*		

A $5.00 non-refundable application fee, payable to the Minister of Finance, is mandatory. The cost of locating on-site and/or preparing any record is $30.00/hour and 20 cents/page for photocopying and you will be contacted for approval for fees in excess of $30.00.

APPENDIX G
TSSA TANK SEARCH

14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario
Canada M8X 2X4
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

www.tssa.org

Administration and
Customer Services

Tel: (416) 734-3570
Fax: (416) 734-3568

24 April 2012
File No: FS 38088

Sarah Sipak
AIMS ENVIRONMENTAL
1020 Denison Street
Unit 111
MARKHAM ON L3R 3W5

Dear Madam:

RE: 1401 Bronte Rd, Oakville, Ontario

This is with reference to your request and fee of $50.00 + HST, for information on the above location.

Enclosed are computerised screen prints showing an active self-serve private fuel outlet. Copies of the inspection reports are also enclosed.

After a search of our files, TSSA has no record of any further outstanding instructions, incident reports, fuel oil spills, or contamination records respecting the above-mentioned property.

This is all the information the Fuels Safety Division has at this time regarding the above address.

It should be noted that the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990 or furnace oil tanks prior to May 1, 2002. Also note that the Fuels Safety Division does not register waste oil tanks in apartments, office buildings, residences etc. or ABOVEGROUND gas or diesel tanks.

Although TSSA believes the information provided pursuant to your request is accurate, please note that TSSA does not warrant this information in any way whatsoever.

Yours truly,

Prem Lal
Coordinator Public Information Services

ORACLE Installed Base

Home Profile Sign Out Help

Item Instances

General
Additional Attributes
Assets
Party Relationships
Owner
Parties
Accounts
Contacts
Summary
Pricing
Counters
Contracts
Notes
Transactions
Service Requests
Repair Orders
History
Operating Units
Configuration

Quick Find Item Instance Go Advanced Search

Logged In As SQUIBELL

Item Instance Details

Item Instance: 10334229
Item: FS PRIVATE FUEL OUTLET - SELF SERVE
Item Description: Fuels Safety Private Fuel Outlet - Self Serve

General Attributes

Organization Name TSSA Item Master
Instance Name
Last Version Label 1
Version Label Date 19-JUL-2000 20:15
Revision
New Version Label
System
External Reference
Item Instance Type
Accounting Classification Customer Product
Operational Status Not Used
Lot Number : not lot-controlled
Status Active
Condition
Quantity 1
UOM Each
Start Date 19-JUL-2000
Start Time 20:15
Shipped On Date
Shipped On Time
End Date
End Time
Return By Date
Return By Time
Actual Return Date
Actual Return Time

* Indicates required field.
Time format is HH24:MM
Note: You do not have permission to make updates in this page.

Creation Completed

Owner

Party Type Party
Party Name: SAW WHET GOLF CLUB
Party Number: 332022
Account Number: 154521
Account Name SAW WHET GOLF CLUB

Current Location

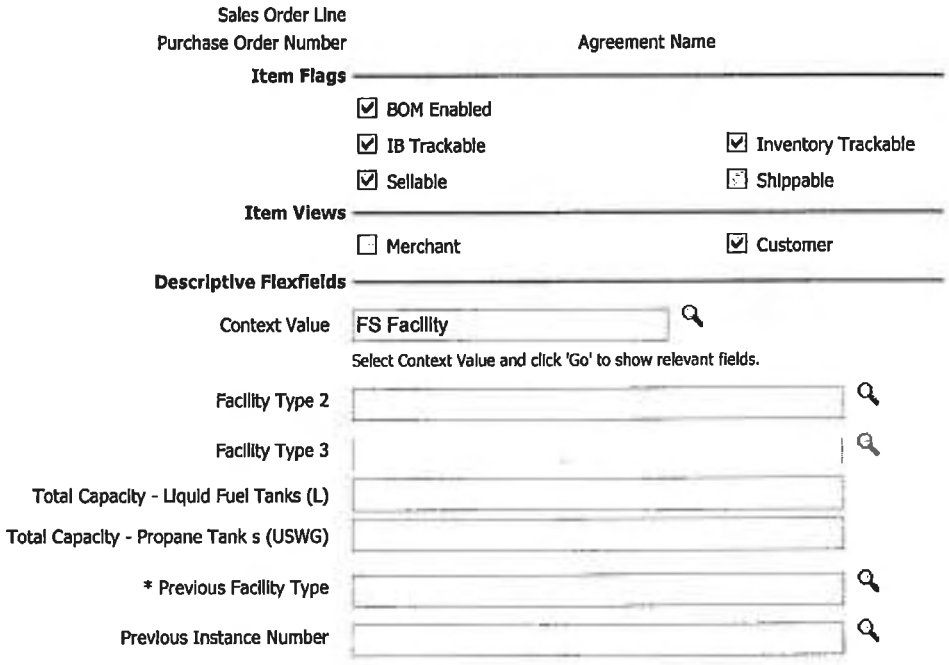
* Type Party Site Go
Party Name SAW WHET GOLF Go
Party Number 332022 Go
*Line 1 1401 BRONTE RD Go
Site Number 336763 Go
Address 1401 BRONTE RD
OAKVILLE, L6J 4Z3, CA

Installed At

Installed Date 19-JUL-2000
Installed Time 20:15
Time format is HH24:MM
Change in installed date does not change contract date.
Type Go

Order

Sales Order Number
Sales Order Date



Item Instances Home Profile Sign Out Help

Perform Periodic Inspection (FS) for Job 010334233-003 (FS PIN 2002-15201)

Description:

Assignments

Status: Complete by DANEKD

Assigned To: Debbie Danek

Outcome: Inspection Complete

Schedule

Scheduled Start: Jun 18, 2004

Scheduled Complete: mmm dd, yyyy

Actual Start: mmm dd, yyyy hh:mm

Actual Complete: Aug 03, 2004 20:38

Reports

Details | Deficiencies | Time | Documents | Comments | OIS Orders | Resolved Orders | Create Def

Show Resolved?

Description	Found By	Date	Resolved By	Date

TECHNICAL STANDARDS and SAFETY AUTHORITY

www.tssa.org

14th Floor, Centre Tower
3300 Bloor Street West
Toronto, Ontario M8X 2X4
Ph - (416) 734-3300, Fax - (416) 231-1626
Toll - 1-877-682-8772

Fuel Safety Inspection Report

Technical Standards and Safety Act, 2000

1 *Report Number:* **FS-2002-0015201**
2 *File Number:* **FS PIN 2002-15201**

3 *Location Address*	4 *License/Serial Number*	5 *Job Type*	6 *Inspection Date*
1401 BRONTE RD OAKVILLE, ON L6J 4Z3 CANADA	**0076603778-C**	**Periodic Inspection (FS)**	**Jul 13, 2004**
	7 *Facility Type*	**Gasoline Station - Self Serve**	

8 *Client*	
SAW WHET GOLF CLUB 1401 BRONTE RD OAKVILLE, ON L6J 4Z3 CA	The Facility/Equipment is inspected in accordance with Ontario's Technical Standards & Safety Act and the appropriate regulations and codes. When an inspector's order is issued, time limits for compliance reflect the severity of the violation and serve to avoid disruption of service. In the interim period the recipient must ensure that additional precautions are taken for safe use.

INSPECTION NOTE: Private Fuel Outlet - own use only

13 *Total Time*	14 *Travel Time*	15 *Billable Hours*	16 *Additional Charges*
2.25	**0.75**	**2**	

Voluntary Compliance Option* - Eligible? ☐ Yes ☒ No *Please, refer to guidelines

I hereby confirm that all the Inspector's orders, appearing on this inspection report have been completed.

Print Name Mike Patterson *Client Signature* _____

Debbie Danek
Inspector

As a not-for-profit regulatory authority, TSSA operates on a cost recovery basis. An invoice will be issued for this activity.

Putting Public Safety First

(Note: This is not an Invoice)

Perform Periodic Inspection (FS) for Job 010334233-002 (E044759)

Description: E044759 Private Fuel Ou 26

Assignments

Status: Complete by DANEKD

Assigned To: Debbie Danek

Outcome: Inspection Complete

Schedule

Scheduled Start: mmm dd, YYYY

Scheduled Complete: mmm dd, YYYY

Actual Start: Jun 18, 2001 00:00

Actual Complete: Jun 18, 2001 00:00

Reports

Details | Deficiencies | Time | Documents | Comments | O/S Orders | Resolved/Orders | Create Def

Note Type	Last Updated By	On	Locked Note
FS Deficiency Outstanding	Debbie Danek	Jun 18, 2001 00:00:00	GASOLINE HANDLING ACT, RSO 1990, C G.4 Section# 6(13)
FS Deficiency Outstanding	Debbie Danek	Jun 18, 2001 00:00:00	GASOLINE HANDLING ACT, RSO 1990, C G.4 Section# 8(25)
FS Deficiency Outstanding	Debbie Danek	Jun 18, 2001 00:00:00	GASOLINE HANDLING ACT, RSO 1990, C G.4 Section# 8(42)
FS Deficiency Outstanding	Debbie Danek	Jun 18, 2001 00:00:00	GASOLINE HANDLING ACT, RSO 1990, C G.4 Section# 4(5)

Technical Standards and Safety Authority

Inspector's Report - Part A

Issued under Ontario's **Energy Act** and/or **Gasoline Handling Act**

Report No. E- 044759

PLEASE PRINT

Location Inspected	Owner's Name
Saw Whet Golf Club	
Address: 1401 Pronte Road	Address:
City/town: Oakville Ontario	City/town:
Postal Code: L6J 4Z3 Tel. No.: 905-827-7750	Postal Code: Tel. No.:
Operator's Name: Mike Patterson	Fuel Supplier: John Ebos - Petro Canada City:
Licence No.: N/A	

Contractor	Registration No.

OPERATION/SUB	LOC TYPE	POP DEN	FUEL	CLASS	REASON	TRIGGER	ACTION
20/01	02	01	GAS	03	26	.01	01

ACT	REG	DURATION	TRAVEL	BILLABLE	BILL	OCC RATE	CAUSE
GHA	521/93	1.5	.5	1.5	(1) 2 3	—	—

CON_FACT	OCC DATE	OCC TIME	FIELD 1	SITE REM	COMPLETED?
		—	—	☐ Yes ☐ No	☐ Yes ☐ No

Investigation/Audit/Occurrence Summary

Inspection on aboveground fuel storage tanks to ensure compliance with the Gasoline Handling Act, Code and Regulations.

Instructions issued

Equipment/Appliance/Component

Type	A/G Tank
Description	Singlewall
Manufacturer	
Model / Serial No.	N/A - No rating plate
Material	Steel w/paint
Fuel Input Rating	
Date of Manufacture	
Installation Date	JUL 12 2001
Supply Pressure / Manifold Pressure	

Equipment/Appliance/Component

Type	A/G Tank
Description	Singlewall
Manufacturer	Clemmer
Model / Serial No.	N/A - [illegible]
Material	Steel w/paint
Fuel Input Rating	
Date of Manufacture	
Installation Date	
Supply Pressure / Manifold Pressure	

TECHNICAL STANDARDS & SAFETY AUTHORITY — RECEIVED — JUL 09 2001 — FUELS SAFETY — CORPORATE SERVICES DIVISION

As a not-for-profit regulatory authority, the Technical Standards and Safety Authority operates on a cost recovery basis. An invoice will be issued for this activity.

Client's Signature	Inspector's Name	Badge #	Date of Inspection
	D Daniels	175	June 18/01

FS 09181 (12/99)

Les demandes d'une version française du présent document seront prises en considération.

Head Office

Technical Standards and Safety Authority

Inspector's Instructions/Orders Part B

00898981

Report No. E-044759

Issued under Ontario's **Energy Act** and **Gasoline Handling Act**

Date: 2021/06/18 (Y/M/D)

Location Address (No RR's)	1401 Bronte Road Oakville Ontario		
Issued To	Saw Whet Golf Club	Position	Mike - operator
Mailing Address			
Your attention is requested pursuant to:	Act: Gasoline Handling	Regulation: 521/93	
Licence # / Expiry	Registration # N/A / Expiry	Certificate # / Expiry	

Order #	Section	You are hereby instructed to correct the following infraction(s)	Compliance Date
1	4(5)	All equipment installed at a facility shall be approved and installed in accordance with the requirements of this Code and the manufacturer's instructions and shall be maintained for use. (nameplate plates on pumps to ensure standard built to)	July 20/21
2	6(13)	Every aboveground tank shall be protected from vehicular impact.	July 20/21
3	8(25)	There shall be posted clearly visible a sign that states or indicates NO SMOKING and IGNITION OFF at each dispensing location.	July 20/21
4	8(42)	The installation of electrical equipment at a place of use shall be in accordance with the Electrical Safety Code (electrical wiring shall be permanent or hard wired - not a plug)	July 20/21

Received By: (print)	Inspector: (print) D Danek
Position:	Signature: D Danek
Signature: M. Vagl	Inspector's Badge #: 175

FS 09221(09/98)

Page 1 of 1

Head Office

Sarah Sipak

From: plal@tssa.org on behalf of Public Information Services [publicinformationservices@tssa.org]
Sent: Monday, April 23, 2012 11:06 AM
To: ssipak@aimsconsulting.com
Subject: Re: Information Request

Hi Sarah:

Thank you for your inquiry.

I have searched the below noted address (addresses) and I have located the following record.

1151 Bronte Road, Oakville has record of 3 active underground tanks.

For a more detailed report including underground fuel storage tank details and copies of all inspection reports, please submit your request in writing to Public Information Services via e-mail (publicinformationservices@tssa.org) or through mail along with a fee of $56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard) or with a cheque made payable to TSSA.

Thank you and have a great day!

Prem
Public Information Services

"Putting Public Safety First"

Technical Standards and Safety Authority
14th Floor, Centre Tower
3300 Bloor Street West
Toronto, ON M8X 2X4

Toll-Free: 1-877-682-8772
Email: publicinformationservices@tssa.org
Web Site: www.tssa.org

On Mon, Apr 23, 2012 at 9:44 AM, Sarah Sipak <ssipak@aimsconsulting.com> wrote:

> Good Morning,
>
> In regards to my previous request made for 1401 Bronte Road, can you also include 1151 Bronte Road, Oakville.
>
> Thank you.

Sarah Sipak, B.Sc.

Environmental Scientist

AiMS Environmental

1020 Denison Street, Unit 111

Markham, ON, L3R 3W5

Tel: 905-474-0058 ext. 107

Fax: 905-474-0601

--

Sarah Sipak

From: plal@tssa.org on behalf of Public Information Services [publicinformationservices@tssa.org]
Sent: Monday, April 23, 2012 11:03 AM
To: ssipak@aimsconsulting.com
Subject: Re: Information Request

Hi Sarah:

Thank you for your inquiry.

I have searched the below noted address (addresses) and I have located the following record.

1401 Bronte Road, Oakville has record of a private fuel outlet with an above ground tanks.

For a more detailed report including underground fuel storage tank details and copies of all inspection reports, please submit your request in writing to Public Information Services via e-mail (publicinformationservices@tssa.org) or through mail along with a fee of $56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard) or with a cheque made payable to TSSA.

Thank you and have a great day!

Prem
Public Information Services

"Putting Public Safety First"

Technical Standards and Safety Authority
14th Floor, Centre Tower
3300 Bloor Street West
Toronto, ON M8X 2X4

Toll-Free: 1-877-682-8772
Email: publicinformationservices@tssa.org
Web Site: www.tssa.org

On Mon, Apr 23, 2012 at 9:36 AM, Sarah Sipak <ssipak@aimsconsulting.com> wrote:

> Good Morning,
>
> Can you please conduct a search on 1401 Bronte Road, Oakville and inform me of any records.
>
> Thank you,

Sarah Sipak, B.Sc.

Environmental Scientist

AiMS Environmental

1020 Denison Street, Unit 111

Markham, ON, L3R 3W5

Tel: 905-474-0058 ext. 107

Fax: 905-474-0601

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APPENDIX H
ERIS HISTORICAL SEARCH

Canada's Primary Environmental Risk Information Service

Project Site:	**Saw-Whet Golf Course** **1401 Bronte Rd** **Oakville, ON**
Client:	**Vanessa Ode** **SCM Risk Management Services Inc.** **150 Commerce Valley Dr W** **Lock Box 200** **Thornhill, ON L3T7Z3**
ERIS Project No:	**20120328017**
Report Type:	**Custom Report - .25km Search Radius**
Prepared By:	**Rafal Wojtasik** rwojtasik@eris.ca
Date:	**April 05, 2012**

ECOLOG ERIS

12 Concorde Place, Suite 800 Toronto, Ontario M3C 4J2
416-510-5204 • Fax: 416-510-5133 Toll Free: 1-866-517-5204 • www.eris.ca • info@eris.ca

Table of Contents

Order Number: 20120328017
Site Name: Saw-Whet Golf Course
Site Address: 1401 Bronte Rd Oakville, ON
Report Type: Custom Report, 0.25 km Search Radius

Report Summary

Order Number: 20120328017
Site Name: Saw-Whet Golf Course
Site Address: 1401 Bronte Rd Oakville, ON
Report Type: Custom Report, 0.25 km Search Radius

Number of Mappable Records Surrounding the Site

Database		Selected	On-site	Within 0.25	0.25km to 0.25km	Total
AAGR	Abandoned Aggregate Inventory	N	0	0	0	0
AGR	Aggregate Inventory	N	0	0	0	0
AMIS	Abandoned Mine Information System	N	0	0	0	0
ANDR	Anderson's Waste Disposal Sites	N	0	0	0	0
AUWR	Automobile Wrecking & Supplies	N	0	0	0	0
BORE	Borehole	N	0	6	0	6
CA	Certificates of Approval	N	0	6	0	6
CFOT	Commercial Fuel Oil Tanks	Y	0	0	0	0
CHEM	Chemical Register	N	0	0	0	0
COAL	Coal Gasification Plants	N	0	0	0	0
CONV	Compliance and Convictions	N	0	0	0	0
CPU	Certificates of Property Use	N	0	0	0	0
DRL	Drill Hole Database	N	0	0	0	0
EASR	Environmental Activity and Sector Registry	N	0	0	0	0
EBR	Environmental Registry	N	0	0	0	0
ECA	Environmental Compliance Approval	N	0	0	0	0
EEM	Environmental Effects Monitoring	N	0	0	0	0
EHS	ERIS Historical Searches	N	0	2	0	2
EIIS	Environmental Issues Information System	N	0	0	0	0
EXP	List of TSSA Expired Facilities	N	0	0	0	0
FCON	Federal Convictions	N	0	0	0	0
FCS	Contaminated Sites on Federal Land	N	0	0	0	0
FOFT	Fisheries & Oceans Fuel Storage Tanks	N	0	0	0	0
FST	Fuel Storage Tank	N	0	8	0	8
GEN	Ontario Regulation 347 Waste Generators Summary	N	0	17	0	17
HINC	TSSA Historic Incidents	N	0	0	0	0
IAFT	Indian & Northern Affairs Fuel Tanks	N	0	0	0	0
INC	TSSA Incidents	N	0	0	0	0
LIMO	Landfill Inventory Management Ontario	N	0	0	0	0
MINE	Canadian Mine Locations	N	0	0	0	0
MNR	Mineral Occurrences	N	0	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	N	0	0	0	0
NCPL	Non-Compliance Reports	N	0	0	0	0
NDFT	National Defence & Canadian Forces Fuel Storage Tanks	N	0	0	0	0
NDSP	National Defence & Canadian Forces Spills	N	0	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	N	0	0	0	0
NEES	National Environmental Emergencies System (NEES)	N	0	0	0	0
NPCB	National PCB Inventory	N	0	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0	0
OGW	Oil and Gas Wells	N	0	0	0	0
OOGW	Ontario Oil and Gas Wells	N	0	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0	0

Report Summary

Order Number: 20120328017
Site Name: Saw-Whet Golf Course
Site Address: 1401 Bronte Rd Oakville, ON
Report Type: Custom Report, 0.25 km Search Radius

Database		Selected	On-site	Within 0.25	0.25km to 0.25km	Total
ORD	Orders	N	0	0	0	0
PAP	Canadian Pulp and Paper	N	0	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	N	0	0	0	0
PES	Pesticide Register	Y	0	2	0	2
PINC	TSSA Pipeline Incidents	N	0	1	0	1
PRT	Private and Retail Fuel Storage Tanks	Y	0	1	0	1
PTTW	Permit to Take Water	N	0	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0	0
RSC	Record of Site Condition	N	0	0	0	0
RST	Retail Fuel Storage Tanks	N	0	0	0	0
SCT	Scott's Manufacturing Directory	N	0	0	0	0
SPL	Ontario Spills	Y	0	2	0	2
SRDS	Wastewater Discharger Registration Database	N	0	0	0	0
TANK	Anderson's Storage Tanks	N	0	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	N	0	0	0	0
VAR	Variances for Abandonment of Underground Storage Tanks	N	0	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	N	0	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	N	0	0	0	0
WWIS	Water Well Information System	Y	0	16	0	16
		TOTAL	0	61	0	61

The databases chosen by the client as per the submitted order form are denoted in the 'Selected' column in the above table. Counts have been provided outside the primary buffer area for cursory examination only. These records have not been examined or verified, therefore, they are subject to change.

SITE DIAGRAM

ECOLOG ERIS
Pinpointing Your Environmental Risks
12 Concorde Pl, Suite 800 North York, ON M3C 4J2
416-510-5204

Project Property: Saw-Whet Golf Course
1401 Bronte Rd
Oakville, ON

ERIS Project #: 20120328017

Date: APR-05-2012

LEGEND

- Project Property
- Database Location

Points of Interest
- Chimney
- Silo

Pipe & Transmission Lines
- Pipeline
- Transmission Line
- Transmission Tower
- Transformer Station

Rail
- Railway - Main
- Railway - Sidetrack
- Railway - Abandoned
- Bridge
- Tunnel

Transportation - Other
- Embankment
- Trail
- Runway

Hydrographic Features
- Permanent Waterway
- Intermittent Waterway
- Open Reservoir
- Dyke/Levee
- Dam
- Breakwall
- Wetland

Landuse Classifications
- Open Area
- Residential
- Commercial
- Resource and Industrial
- Government and Institutional
- Parks and Recreational
- Waterbody

Recreation
- Golf Course/Driving Range
- Park/Sports Field
- Other Recreation Area
- Sports/Race Track
- Cemetery
- Campground

Vegetation
- Wooded Area
- Orchard
- Vineyard

Industrial Resources
- Conveyor
- Crane: Moveable
- Crane: Stationary
- Tank
- Rock Cut
- Auto Wrecker
- Lumber Yard
- Pit

This diagram is to be used solely for relative street location purposes. It may not accurately portray street or site positions.

Site Report

Order Number: 20120328017
Site Name: Saw-Whet Golf Course
Site Address: 1401 Bronte Rd Oakville, ON
Report Type: Custom Report, 0.25 km Search Radius

FOR COMPLETE INFORMATION, REFER TO DETAIL REPORT

A search has been conducted for this site (address) and company name. No records were found, within the database(s) selected, that meet either of these criteria.

Detail Report

Order Number: 20120328017
Site Name: Saw-Whet Golf Course
Site Address: 1401 Bronte Rd Oakville ON
Report Type: Custom Report, 0.25 km Search Radius

If information is required for sites located beyond the selected address, please contact your ERIS representative.

Pesticide Register

Private and Retail Fuel Storage Tanks

Ontario Spills

Water Well Information System

Pesticide Register

Map Key	Company	Address	Licence No.	Licence Type
PES-1	YUN QING XU	2040 BRONTE ROAD OAKVILLE L6M 4J6		Operator
PES-2	YUN QING XU	2040 BRONTE ROAD OAKVILLE L6M 4J6		

Private and Retail Fuel Storage Tanks

Map Key	Company	Address	Location ID	Type	Expiry Date	Capacity (L)	Licence #
PRT-1	THE REGIONAL MUNICIPALITY OF HALTON ATTN JOHN HOEK	1151 BRONTE RD OAKVILLE L6M 3L1	20185	private		13500.00	0076365568

Ontario Spills

Map Key	Company	Address	Ref No.	Incident Dt	MOE Reported Dt	Contaminant Name	Contaminant Quantity
SPL-1	The Regional Municipality of Halton	1179 Bronte Road Halton Hills	0302-6JG5AH	11/24/2005	11/24/2005	GASOLINE	20 L
			Incident Summary:	Halton Region Works: 10-15L gasoline to ground			
			Incident Cause:	Other Discharges			
			Incident Reason:	Other - Reason not otherwise defined			
			Nature of Impact:	Soil Contamination			
			Receiving Medium:	Land			
			Environmental Impact:	Not Anticipated			
SPL-2	Town of Halton Hills	1151 Bronte Road Oakville L6M 3L1	5202-7UDHQV		7/28/2009	DIESEL FUEL	2 tonnes-Imp
			Incident Summary:	TankTek Env'l Services - contam. soil UST			
			Incident Cause:	Tank (Underground) Leak			
			Incident Reason:	Unknown - Reason not determined			
			Nature of Impact:	Soil Contamination			
			Receiving Medium:				
			Environmental Impact:	Confirmed			
n/a	HALTON, REGIONAL MUNICIPALITY	3050 UPPER MIDDLE ROAD, OAKVILLE OAKVILLE WTP. OAKVILLE TOWN	210192	8/28/2001	8/28/2001		
			Incident Summary:	WTP: SODIUM HYPERCHLORIDE TANK LEAK TO BERM AREA CLEANING UP			
			Incident Cause:	OTHER CONTAINER LEAK			
			Incident Reason:	EQUIPMENT FAILURE			
			Nature of Impact:	Multi Media Pollution			
			Receiving Medium:	Land			
			Environmental Impact:	Possible			

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-1		lot 31 con 2	2802400	031	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 600953.6
Northing Nad83: 4808064
Zone: 17
Utm Reliability: margin of error : 100 m - 300 m
Construction Date: 10/5/1963
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 43 ft
Pump Rate: 14 GPM
Static Water Level: 27 ft
Flow Rate:
Clear/Cloudy: CLOUDY
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 128.121383
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: FRESH
Casing Material: STEEL

Thickness	Original Depth	Material Colour	Material
4 ft	4 ft		TOPSOIL, MEDIUM SAND
11 ft	15 ft	BROWN	CLAY
18 ft	33 ft	GREY	CLAY
10 ft	43 ft		GRAVEL, CLAY

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-2		lot 31 con 2	2802399	031	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 601092.6
Northing Nad83: 4807947
Zone: 17
Utm Reliability: unknown UTM
Construction Date: 12/2/1955
Primary Water Use: Not Used
Secondary Water Use:
Well Depth: 60 ft
Pump Rate:
Static Water Level: 50 ft
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Abandoned-Quality
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 129.745239
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: SALTY
Casing Material: STEEL

Thickness	Original Depth	Material Colour	Material
35 ft	35 ft		CLAY
25 ft	60 ft		GRAVEL

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-3		lot 31 con 2	2807236	031	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 601018.3
Northing Nad83: 4807937
Zone: 17
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 3/8/1989
Primary Water Use: Domestic
Secondary Water Use: Irrigation
Well Depth: 83 ft
Pump Rate: 24 GPM
Static Water Level: 29 ft
Flow Rate:
Clear/Cloudy: CLOUDY
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 129.888793
Elevation Reliability:
Depth to Bedrock: 71
Overburden/Bedrock: Bedrock
Water Type: Not stated
Casing Material: STEEL

Thickness	Original Depth	Material Colour	Material
9 ft	9 ft	BROWN	COARSE SAND, LOOSE
7 ft	16 ft	BROWN	COARSE SAND, GRAVEL, LOOSE
3 ft	19 ft	GREY	CLAY, GRAVEL, LOOSE
14 ft	33 ft	BROWN	SAND, CLAY, GRAVEL
6 ft	39 ft	GREY	CLAY, GRAVEL, LOOSE
8 ft	47 ft	GREY	GRAVEL, SAND, PACKED
8 ft	55 ft	BROWN	GRAVEL, SAND, PACKED
8 ft	63 ft	GREY	CLAY, GRAVEL, PACKED
8 ft	71 ft	BROWN	CLAY, GRAVEL, PACKED
12 ft	83 ft	RED	SHALE, HARD

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-4		lot 30 con 1	2803104	030	01	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 600654.6
Northing Nad83: 4808813
Zone: 17
Utm Reliability: margin of error : 30 m - 100 m
Construction Date: 2/21/1969
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 46 ft
Pump Rate: 14 GPM
Static Water Level: 31 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 130.002792
Elevation Reliability:
Depth to Bedrock: 45
Overburden/Bedrock: Bedrock
Water Type: FRESH
Casing Material: STEEL

Thickness	Original Depth	Material Colour	Material
44 ft	44 ft	BROWN	CLAY, GRAVEL
1 ft	45 ft		GRAVEL
1 ft	46 ft	RED	SHALE

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-5		lot 30 con 1	2802338	030	01	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 600639.6
Northing Nad83: 4808844
Zone: 17
Utm Reliability: margin of error : 100 m - 300 m
Construction Date: 1/3/1968
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 78 ft
Pump Rate: 4 GPM
Static Water Level: 37 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 130.328414
Elevation Reliability:
Depth to Bedrock: 46
Overburden/Bedrock: Bedrock
Water Type: FRESH
Casing Material: STEEL, OPEN HOLE

Thickness	Original Depth	Material Colour	Material
1 ft	1 ft		TOPSOIL
11 ft	12 ft	BROWN	CLAY
34 ft	46 ft		GRAVEL
32 ft	78 ft	RED	SHALE

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-6		lot 31 con 2	2803804	031	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 601034.6
Northing Nad83: 4807803
Zone: 17
Utm Reliability: margin of error : 30 m - 100 m
Construction Date: 11/25/1971
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 29 ft
Pump Rate:
Static Water Level: 8 ft
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Boring
Flowing (y/n): N
Elevation (m): 130.49147
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: FRESH
Casing Material: CONCRETE, GALVANIZED

Thickness	Original Depth	Material Colour	Material
10 ft	10 ft		PREV. DRILLED
3 ft	13 ft	GREY	CLAY
3 ft	16 ft	GREY	SAND
11 ft	27 ft	BLUE	CLAY
2 ft	29 ft	GREY	GRAVEL

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-7		lot 30 con 1	2807144	030	01	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 600467.3
Northing Nad83: 4808609
Zone: 17
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 12/22/1988
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 91 ft
Pump Rate: 15 GPM
Static Water Level: 30 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 131.185424
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: SULPHUR
Casing Material: STEEL

Thickness	Original Depth	Material Colour	Material
18 ft	18 ft	BROWN	CLAY, GRAVELLY
73 ft	91 ft	GREY	SAND, GRAVELLY, CEMENTED

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-8		lot 31 con 1	2802350	031	01	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 600415.6
Northing Nad83: 4808586
Zone: 17
Utm Reliability: margin of error : 100 m - 300 m
Construction Date: 8/24/1962
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 39 ft
Pump Rate: 1 GPM
Static Water Level: 28 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Boring
Flowing (y/n): N
Elevation (m): 131.319061
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: FRESH
Casing Material: CONCRETE

Thickness	Original Depth	Material Colour	Material
28 ft	28 ft	BROWN	CLAY
11 ft	39 ft		GRAVEL

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-9		lot 31 con 2	2802398	031	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 601286.6
Northing Nad83: 4807754
Zone: 17
Utm Reliability: unknown UTM
Construction Date: 5/25/1952
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 41 ft
Pump Rate: 8 GPM
Static Water Level: 30 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 129.703094
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: FRESH
Casing Material: STEEL

Thickness	Original Depth	Material Colour	Material
41 ft	41 ft		CLAY

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-10		lot 30 con 1	2807139	030	01	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 600363.3
Northing Nad83: 4808667
Zone: 17
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 12/20/1988
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 57 ft
Pump Rate: 24 GPM
Static Water Level: 29 ft
Flow Rate:
Clear/Cloudy: CLOUDY
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 129.485961
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: SULPHUR
Casing Material: STEEL

Thickness	Original Depth	Material Colour	Material
5 ft	5 ft	BROWN	CLAY, SAND, GRAVEL
12 ft	17 ft	BROWN	CLAY, SAND, LOOSE
6 ft	23 ft	BROWN	CLAY, SAND, GRAVEL
2 ft	25 ft	BROWN	SAND, FINE SAND
24 ft	49 ft	BROWN	SAND, COARSE SAND
8 ft	57 ft	BROWN	GRAVEL, FINE SAND

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-11		lot 30 con 1	2807062	030	01	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 600361.3
Northing Nad83: 4808670
Zone: 17
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 10/15/1988
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 100 ft
Pump Rate: 15 GPM
Static Water Level: 30 ft
Flow Rate:
Clear/Cloudy: CLOUDY
Specific Capacity:
Final Well Status: Abandoned-Quality
Construction Method: Cable Tool
Flowing (y/n): N
Elevation (m): 129.43457
Elevation Reliability:
Depth to Bedrock: 84
Overburden/Bedrock: Bedrock
Water Type: Not stated
Casing Material:

Thickness	Original Depth	Material Colour	Material
5 ft	5 ft	BROWN	CLAY, SAND, GRAVEL
12 ft	17 ft	BROWN	CLAY, SAND, LOOSE
6 ft	23 ft	BROWN	CLAY, SAND, GRAVEL
2 ft	25 ft	BROWN	SAND, LOOSE
24 ft	49 ft	BROWN	GRAVEL, SAND, LOOSE
4 ft	53 ft	BROWN	GRAVEL, FINE GRAVEL
25 ft	78 ft	GREY	CLAY, GRAVEL, LOOSE
6 ft	84 ft	GREY	GRAVEL, PACKED
16 ft	100 ft	RED	SHALE, HARD

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-12		lot 30 con 2	2804747	030	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 601519.6
Northing Nad83: 4807772
Zone: 17
Utm Reliability: margin of error : 30 m - 100 m
Construction Date: 5/29/1975
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 34 ft
Pump Rate: 1 GPM
Static Water Level: 20 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Boring
Flowing (y/n): N
Elevation (m): 124.331558
Elevation Reliability:
Depth to Bedrock: 22
Overburden/Bedrock: Bedrock
Water Type: FRESH
Casing Material: CONCRETE

Thickness	Original Depth	Material Colour	Material
22 ft	22 ft	BROWN	TOPSOIL
12 ft	34 ft	RED	SHALE

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-13		lot 30 con 2	2804749	030	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 601490.6
Northing Nad83: 4807726
Zone: 17
Utm Reliability: margin of error : 30 m - 100 m
Construction Date: 6/3/1975
Primary Water Use: Domestic
Secondary Water Use:
Well Depth: 15 ft
Pump Rate: 6 GPM
Static Water Level: 5 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Boring
Flowing (y/n): N
Elevation (m): 124.610267
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: FRESH
Casing Material: CONCRETE

Thickness	Original Depth	Material Colour	Material
11 ft	11 ft	BROWN	TOPSOIL, SAND
4 ft	15 ft		SAND, GRAVEL

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-14		Oakville	7144016				HALTON	OAKVILLE TOWN

Easting Nad83: 600293
Northing Nad83: 4808519
Zone: 17
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 4/8/2010
Primary Water Use: Monitoring
Secondary Water Use:
Well Depth: 25 ft
Pump Rate:
Static Water Level:
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Observation Wells
Construction Method: Boring
Flowing (y/n):
Elevation (m): 131.408782
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock:
Water Type: Untested
Casing Material: PLASTIC

Thickness	Original Depth	Material Colour	Material
2 ft	2 ft	BLACK	TOPSOIL
15 ft	17 ft	BROWN	CLAY, SAND
3 ft	20 ft	RED	SHALE, LIMESTONE, WEATHERED
5 ft	25 ft	RED	SHALE

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-15			7166352				HALTON	OAKVILLE TOWN

Easting Nad83: 600284
Northing Nad83: 4808672
Zone: 17
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 6/21/2011
Primary Water Use:
Secondary Water Use:
Well Depth:
Pump Rate:
Static Water Level:
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status:
Construction Method:
Flowing (y/n):
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock:
Water Type:
Casing Material:

Thickness	Original Depth	Material Colour	Material

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
WWIS-16		lot 30 con 2	2804748	030	02	DS S	HALTON	OAKVILLE TOWN

Easting Nad83: 601464.6
Northing Nad83: 4807662
Zone: 17
Utm Reliability: margin of error : 30 m - 100 m
Construction Date: 5/31/1975
Primary Water Use: Livestock
Secondary Water Use: Domestic
Well Depth: 34 ft
Pump Rate: 4 GPM
Static Water Level: 24 ft
Flow Rate:
Clear/Cloudy: CLEAR
Specific Capacity:
Final Well Status: Water Supply
Construction Method: Boring
Flowing (y/n): N
Elevation (m): 124.58332
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock: Overburden
Water Type: FRESH
Casing Material: CONCRETE

Thickness	Original Depth	Material Colour	Material
20 ft	20 ft	BROWN	TOPSOIL, SAND
12 ft	32 ft	RED	CLAY, SAND, GRAVEL
2 ft	34 ft		GRAVEL

Water Well Information System

Map Key	Company	Address	Well Id	Lot	Concession	Concession Name	County	Municipality
n/a		lot 29 con 2 Oakville	7105536	029	02		HALTON	OAKVILLE TOWN

Easting Nad83: 6001013
Northing Nad83: 4809099
Zone: 17
Utm Reliability: margin of error : 10 - 30 m
Construction Date: 5/13/2008
Primary Water Use:
Secondary Water Use:
Well Depth:
Pump Rate:
Static Water Level:
Flow Rate:
Clear/Cloudy:
Specific Capacity:
Final Well Status: Abandoned-Other
Construction Method:
Flowing (y/n):
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Overburden/Bedrock:
Water Type:
Casing Material:

Thickness	Original Depth	Material Colour	Material

Appendix: Ontario Database Descriptions

EcoLog Environmental Risk Information Services Ltd can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to EcoLog ERIS at the time of update. **Note:** Databases denoted with "*" indicates that the database will no longer be updated. See the individual database descriptions for more information.

Provincial Government Source Databases:

Abandoned Aggregate Inventory **Up to Sept 2002** **AAGR**

The MAAP Program maintains a database of all abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.

Aggregate Inventory **Up to Jun 2011** **AGR**

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. Please note that the database is only referenced by lot\concession and city/town location. The database provides information regarding the registered owner/operator, location, status, licence type, and maximum tonnage.

Abandoned Mines Information System **1800-Jan 2012** **AMIS**

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Borehole **1875-Aug 2011** **BORE**

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc.
For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Certificates of Approval **1985-Oct 30, 2011*** **CA**

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

TSSA Commercial Fuel Oil Tanks 1948-Aug 2011 **CFOT**

Since May 2002, Ontario developed a new act where it became mandatory for fuel oil tanks to be registered with Technical Standards & Safety Authority (TSSA). This data would include all commercial underground fuel oil tanks in Ontario with fields such as location, registration number, tank material, age of tank and tank size.

Inventory of Coal Gasification Plants and Coal Tar Sites April 1987 and November 1988* **COAL**

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the "Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Compliance and Convictions 1989-Feb 2012 **CONV**

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Certificates of Property Use 1994-Feb 2012 **CPU**

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Drill Holes 1886-Oct 2011 **DRL**

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Environmental Activity and Sector Registry Oct 31, 2011-Feb 2012 **EASR**

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Environmental Registry 1994-Feb 2012 **EBR**

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Environmental Compliance Approval **Oct 31, 2011-Feb 2012** **ECA**

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For CofA's prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

List of TSSA Expired Facilities **Current to Feb 2012** **EXP**

This is a list of all expired facilities that fall under the TSSA (TSS Act & Safety Regulations), including the six regulations that exist under the Fuels Safety Division. It will include facilities such as private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. These tanks have been removed and automatically fall under the expired facilities inventory held by TSSA.

TSSA Fuel Storage Tanks **Current to Jun 2011** **FST**

The Technical Standards & Safety Authority (TSSA), under the *Technical Standards & Safety Act* of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

Ontario Regulation 347 Waste Generators Summary **1986-Oct 2010** **GEN**

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

TSSA Historic Incidents **2006-June 2009** **HINC**

This database will cover all incidences recorded by TSSA with their older system, before they moved to their new management system. TSSA's Fuels Safety Program administers the *Technical Standards & Safety Act* 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. We also work to protect the public, the environment and property from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from pipelines, diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

TSSA Incidents **June 2009-Mar 2012** **INC**

TSSA's Fuels Safety Program administers the *Technical Standards & Safety Act* 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Includes incidents from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

Landfill Inventory Management Ontario 2010 **LIMO**

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the ministry compiles new and updated information. The inventory will include small and large landfills. Additionally, each year the ministry will request operators of the larger landfills complete a landfill data collection form that will be used to update LIMO and will include the following information from the previous operating year. This will include additional information such as estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills will include information such as site owner, site location and certificate of approval # and status.

Mineral Occurrences 1846-Nov 2011 **MNR**

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the planimetric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Non-Compliance Reports 1992(water only), 1994-2010 **NCPL**

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Ontario Oil and Gas Wells 1800-Jun 2011 **OOGW**

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, well cap date, licence no., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Ontario Inventory of PCB Storage Sites 1987-Oct 2004 **OPCB**

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Orders 1994-Feb 2012 **ORD**

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Pesticide Register 1988-Mar 2011 **PES**

The Ontario Ministry of Environment maintains a database of all manufacturers and vendors of registered pesticides.

TSSA Pipeline Incidents **June 2009-Mar 2012** **PINC**

TSSA's Fuels Safety Program administers the *Technical Standards & Safety Act* 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. This database will include spills, strike and leaks from recorded by the TSSA.

Private and Retail Fuel Storage Tanks **1989-1996*** **PRT**

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Permit to Take Water **1994-Feb 2012** **PTTW**

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Ontario Regulation 347 Waste Receivers Summary **1986-2008** **REC**

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Record of Site Condition **1997-Sept 2001, Oct 2004-Feb 2012** **RSC**

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.
RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Ontario Spills **1988-2011** **SPL**

This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Wastewater Discharger Registration Database **1990-2010** **SRDS**

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

TSSA Variances for Abandonment of Underground Storage Tanks **Current to October 2011** **VAR**

The TSSA, Under the Liquid Fuels Handling Code and the Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, you may apply to seek a variance from this code requirement. This is a list of all variances granted for abandoned tanks.

Waste Disposal Sites - MOE CA Inventory **1970-Feb 2012** **WDS**

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Waste Disposal Sites - MOE 1991 Historical Approval Inventory **Up to Oct 1990*** **WDSH**

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Water Well Information System **1955-2011** **WWIS**

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Federal Government Source Databases: **Diagram Identifier:**

Environmental Effects Monitoring **1992-2007*** **EEM**

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Environmental Issues Inventory System **1992-2001*** **EIIS**

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Federal Convictions **1988-Jun 2007** **FCON**

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Contaminated Sites on Federal Land **June 2000-Jan 2012** **FCS**

The Treasury Board of Canada Secretariat maintains an inventory of all known contaminated sites held by various Federal departments and agencies. This inventory does not include properties owned by Crown corporations, but does contain non-federal sites for which the Government of Canada has accepted some or all financial responsibility. All sites have been classified through a system developed by the Canadian Council of Ministers of the Environment. The database provides information on company name, location, site ID #, property use, classification, current status, contaminant type and plan of action for site remediation.

Fisheries & Oceans Fuel Tanks **1964-Sept 2003** **FOFT**

Fisheries & Oceans Canada maintains an inventory of all aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Indian & Northern Affairs Fuel Tanks **1950-Aug 2003** **IAFT**

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of all aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

National Analysis of Trends in Emergencies System (NATES) **1974-1994*** **NATE**

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

National Defence & Canadian Forces Fuel Tanks **Up to May 2001*** **NDFT**

The Department of National Defence and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

National Defence & Canadian Forces Spills **Mar 1999-Aug 2010** **NDSP**

The Department of National Defence and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

National Defence & Canadian Forces Waste Disposal Sites **2001-April 2007** **NDWD**

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

National Environmental Emergencies System (NEES) 1974-2003 **NEES**

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for all previous Environment Canada spill datasets. NEES is composed of the historic datasets – or Trends – which dates from approximately 1974 to present. **NEES Trends** is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

National PCB Inventory 1988-2008 **NPCB**

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. All federal out-of-service PCB containing equipment and all PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites.

National Pollutant Release Inventory 1993-2009 **NPRI**

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Parks Canada Fuel Storage Tanks 1920-Jan 2005 **PCFT**

Canadian Heritage maintains an inventory of all known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Transport Canada Fuel Storage Tanks 1970-March 2007 **TCFT**

With the provinces of BC, MB, NB, NF, ON, PE, and QC; Transport Canada currently owns and operates 90 fuel storage tanks. This inventory will also include The Pickering Lands, which refers to the 7,530 hectares (18,600 acres) of land in Pickering, Markham and Uxbridge - owned by the Government of Canada since 1972. Properties on this land has been leased by the government since 1975, falls under the Site Management Policy of Transport Canada, but administered by Public Works and Government Services Canada. Our inventory provides information on the site name, location, tank age, capacity and fuel type.

Private Source Databases:

Anderson's Waste Disposal Sites 1860s-Present **ANDR**

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the *Ontario MOE Waste Disposal Site Inventory*, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. *Please note that the data is not warranted to be complete, exhaustive or authoritive. The information was collected for research purposes only.*

Automobile Wrecking & Supplies 2001-Jun 2010 **AUWR**

This database provides an inventory of all known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Chemical Register 1992, 1999-Jun 2010 **CHEM**

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

ERIS Historical Searches 1999-Sept 2011 **EHS**

EcoLog ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Canadian Mine Locations 1998-2009 **MINE**

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Oil and Gas Wells Oct 2001-2011 **OGW**

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickles' database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Canadian Pulp and Paper 1999, 2002, 2004, 2005, 2009 **PAP**

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Retail Fuel Storage Tanks 2000-Jun 2010 **RST**

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks. Information is provided on company name, location and type of business.

Scott's Manufacturing Directory 1992-Mar 2011 **SCT**

Scott's Directories is a data bank containing information on over 70,000 manufacturers in Ontario. Even though Scott's listings are voluntary, it is the most comprehensive database of Ontario manufacturers available. Information concerning a company's address, plant size, and main products are included in this database. This database begins with 1992 information and is updated annually.

Anderson's Storage Tanks 1915-1953* **TANK**

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. *Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.*

APPENDIX I

ON-SITE RECORD COLLECTION

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport.

TA62778-2

Movement Document / Manifest Reference No. / N° de référence du document de mouvement/manifeste

A — Generator / consignor / Producteur / expéditeur

Registration No. / Provincial ID No. / N° d'immatriculation - d'Id. provincial: ON1075400

Company name / Nom de l'entreprise: SAW-WHET GOLF COURSE

Mailing address / Adresse postale: 1265 BRONTE ROAD, OAKVILLE — Province: ON CA — Postal code / Code postal: L6M 4G3

E-mail / Courrier électronique:

Tel. No. / N° de tél.: 905-825-9457

Shipping site address / Adresse du lieu de l'expédition: 1265 BRONTE ROAD

City / Ville: OAKVILLE — Province: ON CA — Postal code / Code postal: L6M 4G3

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: SAFETY-KLEEN CANADA INC.

Registration No. / Provincial ID No. / N° d'immatriculation - d'Id. provincial: A130205

Mailing address: 1574 WILSON STREET WEST UNITS 1,2 AND 3, HAMILTON (ANCASTER) ON CA L9G 3L3

E-mail / Courrier électronique:

Tel. No. / N° de tél.: 905-648-3270

Receiving site address / Adresse du lieu de réception: 1574 WILSON STREET WEST UNITS 1,2 AND 3

City / Ville: HAMILTON (ANCASTER) — Province: ON CA — Postal code / Code postal: L9G 3L3

B — Carrier / Transporteur

Registration No. / Provincial ID No. / N° d'immatriculation - d'Id. provincial: A8231

Company name / Nom de l'entreprise: SAFETY-KLEEN CANADA INC.

Mailing address: 300 WOOLWICH ST — City / Ville: BRESLAU — Province: ON CA — Postal code / Code postal: N0B 1M0

E-mail / Courrier électronique:

Tel. No. / N° de tél.: 519-648-2291

Vehicle / Véhicule — Trailer - Rail car No. 1 / 1re remorque - wagon — Registration No. / N° d'immatriculation: 350 4YR — Prov.: ONT

Trailer - Rail car No. 2 / 2e remorque - wagon:

Port of entry / Point d'entrée: International use only — Port of exit / Point de sortie: International use only

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. / Attestation du transporteur : J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): Derrek Merkel

Tel. No. / N° de tél.: 519-648-2291

Year / Année, Month / Mois, Day / Jour: 12 03 27 — Signature: [signature]

C — Receiver / consignee / Réceptionnaire / destinataire

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

Registration No. / Provincial ID No.: A130205

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A: ☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise: SAFETY-KLEEN CANADA INC.

Mailing address / Adresse postale: 1574 WILSON STREET WEST UNITS 1,2 AND 3, HAMILTON (ANCASTER) — Province: ON CA — Postal code: L9G 3L3

E-mail / Courrier électronique:

Tel. No. / N° de tél.: 905-648-3270

Receiving site address / Adresse du lieu de destination: 1574 WILSON STREET HAMILTON (ANCASTER) ON CA L9G 3L3

Date received / Date de réception: Year / Année, Month / Mois, Day / Jour — Time / Heure ☐ A.M. ☐ P.M.

If waste or recyclable material is to be transferred, specify intended company name / Si les déchets ou matières recyclables doivent être transférés, préciser le nom du destinataire

Registration No. / Provincial ID No. / N° d'immatriculation / d'Id provincial

	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe, Sub. class(es)	UN No. / N° NU	Packing / Gr. d'emballage	Quantity shipped / Quantité expédiée	Units / Unités	Packaging No. / N°	Codes	Phys. state / État phys.	Quantity received / Quantité reçue	Units / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment Accepted / Accepté	Refused / Refusé	Decant / Pack. Cont.
(i)	213L	RECYCLABLE CLEANING COMPOUNDS(petroleum naphtha) (non TDG regulated) (ON 213L)	NA	NA	NA	30	L	01	01	1		L		01			
(ii)																	
(iii)																	
(iv)																	

	Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment / Envoi	Of / De	D or R code / Code E ou R	C code / Code C	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	H code / Code H	Y code / Code Y	Material code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)												
(ii)												
(iii)												
(iv)												

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Receiver / consignee certification: I certify that the information contained in Part C is correct and complete. / Attestation du réceptionnaire / destinataire : J'atteste que tous les renseignements à la partie C sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie):

Signature:

Tel. No. / N° de tél.: 905-648-3270

Special handling / Manutention spéciale: ☐ Attached / Ci-joint ☑ As follows / Ci-contre: IN CASE OF SPILL CALL: MOE# 1-800-268-6060, SAFETY-KLEEN 24-HR NUMBER: 1-800-468-1760

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. / Attestation du producteur / expéditeur : J'atteste que tous les renseignements à la partie A sont exacts et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): Mike Bondarenko — Signature: [signature]

Tel. No. / N° de tél.: 905-825-9457

Date shipped / Date d'expédition: Year / Année, Month / Mois, Day / Jour: 12 03 27 — Time / Heure: 8:45 A.M.

Scheduled arrival date / Date d'arrivée prévue: Year / Année, Month / Mois, Day / Jour: 12 03 27

MOE 04-1917 (07/07) SK SHIP#206519060 SVC DOC# 57332263 PLANT # CONS PLNT# 7003

Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso

Copy / Copie 1 (white / blanche

MANIFEST - MANIFESTE

This Manifest conforms to all Federal and Provincial transport and environmental legislation requiring manifesting.
Ce manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport requérant un manifeste.

VV27996-6-1

Manifest Reference No. / N° de référence du manifeste: VV27996-6

A Consignor (Generator) / Expéditeur (Producteur)
Provincial ID No. / N° d'id. provincial: ON1075400
Company name / Nom de l'entreprise: SAW-WHET GOLF COURSE
Mailing address / Adresse postale | City / Ville | Province | Postal code / Code postal
Shipping site address / Origine de l'expédition: 1401 BRONTE ROAD
City / Ville: OAKVILLE | Province: ON CAN | Postal code / Code postal: L6J 4Z3

Intended consignee / Destinataire prévu: SAFETY-KLEEN CANADA INC.
Provincial ID No. / No d'id. provincial: A130205
PO BOX 81270
City / Ville: ANCASTER | Province: ON CAN | Postal code / Code postal: L9G 3L3
Destination de l'expédition: 1574 HWY #2 UNIT #1 AND UNIT #2
City / Ville: ANCASTER | Province: ON CAN | Postal code / Code postal: L9G 3L3

B Carrier / Transporteur
Provincial ID No. / N° d'id. provincial: A8231
Company name / Nom de l'entreprise: SAFETY-KLEEN CANADA INC.
REGIONAL RD 17
300 WOOLWICH ST
BRESLAU | ON CAN | N0B 1M0

	Registration No. / N° d'immatriculation	Prov.
Vehicle / Véhicule	819-8145	ONT
Trailer/Rail Car No. 1 / 1re remorque – wagon		
Trailer/Rail Car No. 2 / 2e remorque – wagon		

Point of entry / Point d'entrée | Point of exit / Point de sortie

Carrier Certification: I declare that I have received waste as offered by the consignor in Part A for delivery to the intended consignee and that the information contained in Part B is complete and correct. / Déclaration du transporteur : J'atteste avoir reçu les déchets offerts par l'expéditeur dans la partie A en vue de leur livraison au destinataire choisi et que les renseignements inscrits à la partie B sont exacts et complets.

Year / Année: 02 | Month / Mois: 01 | Day / Jour: 23
Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): M. Scargall
Signature: M Scargall
Tel. No. / N° de tél.: (519-648-2291

C Consignee (Receiver) / Destinataire (Réceptionnaire)
Provincial ID No. / N° d'id. provincial: A130205
Consignee information same as Intended Consignee in Part A / L'information à fournir par le destinataire est la même qu'en A
☐ Yes / Oui ☐ No, complete the boxed area below / Non, compléter la boîte ci-dessous
Company name / Nom de l'entreprise: SAFETY-KLEEN CANADA INC.
Address / Adresse: PO BOX 81270
City / Ville: ANCASTER | Province | Postal code / Code postal: ON CAN L9G 3L3
Destination de l'expédition: 1574 HWY #2 UNIT #1 AND UNIT #2
City / Ville: ANCASTER | Province | Postal code / Code postal: ON CAN L9G 3L3
Date received / Date de réception: Year / Année | Month / Mois | Day / Jour
Time / Heure: ☐ A.M. ☐ P.M.

Reference nos. of other Manifest(s) used / N°s de références des autres manifestes utilisés

Physical state / État physique	Waste identification / Identification du déchet: Shipping name of waste / Appellation réglementaire du déchet	Provincial No. / N° (Québec-Ontario only) (Québec-Ontario seul)	TDGA/PIN LTMD/NIP	Quantity shipped / Quantité expédiée	Units L or kg / unités	Classification	Packaging group / Groupe d'emballage	Packaging Containers: No. / nbre	Codes int.–ext.	Quantity received / Quantité reçu	Units L or kg / unités	Identify any shipment discrepancy problems. Attach addendum if necessary. / Indiquer toute différence relative à l'expédition. Annexer une feuille au besoin.	Handling code / Code de manutention	Decontamination / Décontamination: Packaging / Contenants Yes / Oui	Decontamination / Décontamination: Packaging / Contenants Out	Decontamination / Décontamination: Véhicules Yes / Oui	Decontamination / Décontamination: Véhicules Out
1:	603	3:															
2:		4:															
L	WASTE PETROLEUM DISTILLATES N.O.S. (NAPHTHA)	213I	UN1268	33	L	3	III	1	01		L		01				

DO NOT WRITE IN THIS AREA / NE PAS ÉCRIRE DANS CET ESPACE

Special handling/Emergency instructions / Manutention spéciale/Instructions d'urgence: ☐ Attached / Ci-jointes ☒ Below / Ci-dessous
IN CASE OF SPILL CALL: MOE # 1-800-268-6060
SAFETY-KLEEN (COLLECT) 24HR # 1-800-468-1760
C# 0000-7193-13 BR# 811203 WK: 0204 R#

Circulation no. – Quebec only / N° de circulation – Réservé au Québec

Date shipped / Date d'expédition: Year / Année: 02 | Month / Mois: 01 | Day / Jour: 23
Time / Heure: 2:00 ☐ A.M. ☒ P.M.
Scheduled arrival date / Date d'arrivée prévue: Year / Année: 02 | Month / Mois: 01 | Day / Jour: 23

If handling code "Other" (specify) / Si code de manutention "autre" (spécifier):

If waste to be transferred, supply intended company name / Si les déchets doivent être transférés, préciser le nom du destinataire prévu | Provincial ID No. / N° d'id. provincial

Address / Adresse | City / Ville | Prov.

Consignor Certification: I declare that the information contained in Part A is correct and complete. / Déclaration de l'expéditeur : Je déclare que tous les renseignements à la partie A sont véridiques et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): YAKI INGERTSA
Signature: K Lord
Tel. no. / N° de tél.: (905-825-9457

Consignee Certification: I declare that the information contained in Part C is correct and complete. / Déclaration du destinataire : Je déclare que tous les renseignements à la partie C sont véridiques et complets.

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie)
Signature
Tel. no. / N° de tél.: (905-648-3270

MOE 04-1917 (06/93)
TRACKING NBR: 101678544 SVC DOC NBR: 0017220916 CARR LOC NBR: CONS LOC NBR: 811203
Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso
Copy / Copie 1 (white / blanc)

CARCINOGENICITY

Assessment IARC Group 3: cannot be classified as carcinogenic to humans.

12. ECOLOGICAL INFORMATION

Component ecotoxicology Pentachloronitrobenzene Acute toxicity fish:	Acute toxicity fish LC50 - Bluegill (Lepomis macrochirus) Result: 0.1 mg/l Exposure time: 96 h

Component ecotoxicology Pentachloronitrobenzene Acute toxicity fish:	Acute toxicity fish LC50 - Rainbow trout (Oncorhynchus mykiss) Result: 0.55 mg/l Exposure time: 96 h
Component ecotoxicology Pentachloronitrobenzene Acute toxicity to aquatic invertebrates:	Acute daphnia toxicityLC50 - Water flea (Daphnia magna) Result: 0.77 mg/l Exposure time: 48 h

13. DISPOSAL CONSIDERATIONS

General: Dispose of waste material in compliance with all federal, provincial and local regulations., Avoid discharge to sewers and natural waters.

Non-cleaned packages
Empty drums should be decontaminated and either passed to an an approved drum reconditioner or destroyed., Containers that cannot be cleaned must be treated as waste.

14. TRANSPORT INFORMATION

TDG - Canada

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class: 9
UN ID #: UN 3082
Packing group: III

IF FOR DISPOSAL

IMDG Classification

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
Class: 9
Subsidiary risk: marine pollutant
UN ID #: UN 3082
Packing group: III
Marpol: marine pollutant

ICAO Classification

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class: 9
UN ID #: UN 3082
Packing group: III

Chemtura

TERRACLOR® FLOWABLE

Version:	1.3
Date of issue:	05/02/2006
Date printed:	05/03/2006

15. REGULATORY INFORMATION

WHMIS CLASSIFICATION

This product is registered under the Pest Control Products Act and is therefore exempt from WHMIS requirements. Please read entire MSDS for safety precautions!

CPR Compliance

This product has been classified with the hazard criteria of the CPR, and the MSDS contains all the information required by CPR.

CHEMICAL INVENTORY

Canada:	This product is exempt from the New Substances Notification Regulations under CEPA when used as a component in a registered pesticide formulation., PCP# 27691
Europe:	The ingredients of this product are on the EINECS inventory.
United States:	The ingredients of this product are listed on the TSCA inventory or are exempt.
Australia:	The ingredients of this product are on the AICS inventory.
China:	This product is listed with the State Environmental Protection Administration (SEPA).
Japan:	The ingredients of this product are on the ENCS inventory.
Philippines:	The ingredients of this product are on the PICCS.

16. OTHER INFORMATION

FURTHER INFORMATION

MAY BE ON THE INVENTORY LIST BUT NOT NECESSARILY REGISTERED. (Korea, China, New Zealand) CONSULT REGULATORY SPECIALIST.

STP	Standard temperature and pressure
W/W	Weight/Weight

syngenta

MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection Canada, Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3

In Case of Emergency, Call
1-800-327-8633 (FAST MED)

Date of MSDS Preparation (Y/M/D): 2005-12-31

Supersedes date (Y/M/D): 04-06-01

MSDS prepared by:
Department of Regulatory & Biology Development
Syngenta Crop Protection Canada, Inc.

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: **PRIMO MAXX®** Formulation No.: A11825A
Registration Number: 26989 (Pest Control Products Act)
Chemical Class: Cyclopropyl Derivative of Cyclohexenone Plant Growth Inhibitor
Synonym: None

Active Ingredient(%): Trinexapac-Ethyl (11.3%) CAS No.: 95266-40-3
Chemical Name: 4-(Cyclopropyl-a-hydroxymethylene)-3,5-dioxo-cyclohexanecarboxylic acid ethylester

Product Use: PRIMO MAXX is a microemulsion concentrate for managing growth, improving quality and stress tolerance and edging of turfgrass on golf course and commercial sod farms. For further details please refer to product label.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Tetrahydrofurfuryl Alcohol (THFA) CAS No. 97-99-4	Not Established	Not Established	2 ppm (TWA)****	No	Yes
Trinexapac-Ethyl (11.3%)	Not Established	Not Established	10 mg/m³ TWA***	No	Not Established

*** Syngenta Occupational Exposure Limit (OEL)
**** Recommended by AIHA (American Industrial Hygiene Association)
† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: B

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May cause eye irritation. Exposure to high vapour levels may cause headache, dizziness, numbness, nausea, incoordination, or other central nervous system effects.

Hazardous Decomposition Products

Can decompose at high temperatures and form toxic gases.

Physical Properties

Appearance: Amber liquid.
Odour: Odourless.

Unusual Fire, Explosion and Reactivity Hazards

Combustible liquid. Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back.
During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. **Call the Syngenta Emergency Line [1-800-327-8633 (1-800-FASTMED)],** for further information.

EYE CONTACT:	Immediately flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.
SKIN CONTACT:	Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation occurs.
INHALATION:	Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is laboured, give oxygen. Obtain immediate medical attention.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Provided the patient is conscious, wash out mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Treat symptomatically. Contact with eyes may require specialised ophthalmologic attention.

CAUTION: Contains petroleum distillate - vomiting may cause aspiration pneumonia. Do not induce emesis. If a large amount has been ingested, lavage stomach carefully to avoid aspiration.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

Persons with preexisting dermatitis, respiratory disorders, or an allergic history should use extra care in handling this product.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: 76.7 °C.
Upper and lower flammable (explosive) limits in air: Not available.
Auto-ignition temperature: Not Available.
Flammability: Combustible liquid.
Hazardous combustion products: Toxic, flammable fumes are released by thermal decomposition in a fire. Thermal decomposition products may include oxides of nitrogen, carbon and chlorine.
Conditions under which flammability could occur: Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back. Keep fire exposed containers cool by spraying with water.
Extinguishing media: Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist, (avoid use of water jet). Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings,

area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.
Sensitivity to explosion by mechanical impact: No.
Sensitivity to explosion by static discharge: No.
National Fire Code classification: Class IIIA Combustible Liquid.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation.
Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Keep product, wash or rinse water, and contaminated materials out of water, away from crops, and away from access by people, animals and birds.
Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Personal protective equipment for each exposure route:
General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, or handling tobacco.

INGESTION: Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

EYES: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

SKIN: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

INHALATION: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying

respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Amber liquid.
Formulation Type: Microemulsion concentrate.
Odour: Odourless.
pH: 3.63 (1% emulsion in water @ 25 °C).
Vapour pressure and reference temperature: 1.6×10^{-5} (Trinexapac-Ethyl Technical)
Vapour density: Not available.
Boiling point: Not available.
Melting point: Not available.
Freezing point: -25 °C.
Specific gravity or density: 1.07 g/cm^3 @ 20 °C.
Evaporation Rate: Not available.
Water/oil partition coefficient: Not available.
Odour threshold: Not available.
Viscosity: 41.1 cps @ 21 °C.
Solubility in Water: 1100 mg/L @ 25 °C (Trinexapac-Ethyl Technical).

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.
Conditions to avoid: Keep away from heat, open flames or other ignition sources.
Incompatibility with other materials: Strong oxidizing.
Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.
Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	Practically Non-Toxic Oral (LD50 Rat):	> 5,050 mg/kg body weight
Dermal:	Slightly Toxic Dermal (LD50 Rabbit):	> 2,020 mg/kg body weight
Inhalation:	Slightly Toxic Inhalation (LC50 Rat):	> 2.57 mg/L air - 4 hours
Eye Contact:	Moderately Irritating (Rabbit)	
Skin Contact:	Non-Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects
Trinexapac-Ethyl Technical: None observed.

Chronic/Subchronic Toxicity Studies
Trinexapac-Ethyl Technical: Liver, kidney and brain (dogs) effects at high doses (>5,000 ppm).

Carcinogenicity
Trinexapac-Ethyl Technical: Slight increase in stomach tumors in male mice at high doses (2,000 ppm).

Other Toxicity Information:

None.

Toxicity of Other Components

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the "other components" in the formulation.

Tetrahydrofurfuryl Alcohol (THFA):

Inhalation of vapours at high concentrations can cause central nervous system effects (dizziness, headache), irritation to eyes or respiratory tract. Chronic overexposure may affect the kidney.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredients

Trinexapac-Ethyl Technical:	Liver, kidney, brain

Inert Ingredients

Tetrahydrofurfuryl Alcohol (THFA):	CNS, kidney.

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

PRIMO MAXX is a microemulsion concentrate that is mixed with water and applied as a spray to turf to manage growth, improve quality and stress tolerance and edging on golf courses and commercial sod farms. The active ingredient, trinexapac-ethyl, is practically nontoxic to birds and insects (bees), but is non-toxic to slightly toxic to fish and aquatic invertebrates (water flea).

Eco-Acute Toxicity

Trinexapac-Ethyl Technical:

Bees LC_{50}/EC_{50}	47 µg/bee
Invertebrates (*Daphnia magna*) 48-hour LC_{50}/EC_{50}	> 142.5 mg/L
Fish (Rainbow Trout) 96-hour LC_{50}/EC_{50}	68 mg/L
Fish (Bluegill) 96-hour LC_{50}/EC_{50}	> 130 mg/L
Birds (8-day dietary - Bobwhite Quail) LC_{50}/EC_{50}	> 5,620 ppm
Birds (8-day dietary - Mallard Duck) LC_{50}/EC_{50}	> 5,200 ppm
Bobwhite Oral LC_{50}	> 2,250 mg/kg
Mallard Oral LC_{50}	> 2,000 mg/kg

Eco-Chronic Toxicity

Trinexapac-Ethyl Technical:

Fish (Fathead minnow) Early Life Stage MATC	> 0.41 and < 0.80 mg/L
Invertebrate (*Daphnia Magna*) Life Cycle MATC	> 2.4 and < 5.1 mg/L
Mallard Reproduction NOEC	600 ppm
Bobwhite Reproduction NOEC	600 ppm

Environmental Fate

The active ingredient, trinexapac-ethyl, has a low bioaccumulation potential, low mobility, and low persistence in soil and water. The dissipation half-life (DT50) in soil was 1 day for the parent compound via hydrolysis (under moist, aerobic conditions) and 3-6 days in aquatic systems. The main route of degradation is by hydrolysis as well microbial degradation and formation of bound residues. The bulk material sinks in water (after 24 h test) and mixes with water (water based).

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL.
Not Regulated.

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 26989

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Crop Protection Canada, Inc.
1-87-SYNGENTA (1-877-964-3682)

Syngenta Crop Protection Canada, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date thereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates to the specific product designated and may no be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of Syngenta Crop Protection Canada, Inc., Syngenta Crop Protection Canada, Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

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MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection Canada, Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3

In Case of Emergency, Call 1-800-327-8633 (FAST MED)

Date of MSDS Preparation (Y/M/D): 2005-03-01

Supersedes date (Y/M/D): NEW

MSDS prepared by:
Department of Regulatory & Biology Development
Syngenta Crop Protection Canada, Inc.

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: **HERITAGE™ MAXX Fungicide**
Registration Number: 28393 (Pest Control Products Act)
Chemical Class: A beta-methoxyacrylate fungicide
Synonym: None

Formulation No.: A13972A

Active Ingredient (%): Azoxystrobin (9.2%) CAS No.: 131860-33-8
Chemical Name : Methyl (E)-2-{2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate
Chemical Class: A beta-methoxyacrylate fungicide

Product Use: Broad-spectrum fungicide that is mixed with water and used as a spray to control various diseases on registered vegetation. Please refer to product label for further details.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Tetrahydrofurfuryl Alcohol	Not Established	Not Established	2 mg/m³ TWA****	No	Yes
Azoxystrobin (9.2%)	Not Established	Not Established	2 mg/m³ TWA***	No	Not Established

*** Syngenta Occupational Exposure Limit (OEL)
**** Recommended by AIHA (American Industrial Hygiene Association)
† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: B, S

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May cause eye and skin irritation.
Exposure to high vapour levels may cause headache, dizziness, numbness, nausea, incoordination, or other central nervous system effects.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Light amber to amber liquid.
Odour: Ether-like.

Unusual Fire, Explosion and Reactivity Hazards

Combustible liquid. Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back.
During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line **[1-800-327-8633 (1-800-FASTMED)]**, for further information.

EYE CONTACT:	Immediately flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.
SKIN CONTACT:	Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation occurs.
INHALATION:	Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is laboured, give oxygen. Obtain immediate medical attention.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Provided the patient is conscious, wash out mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Contains petroleum distillate - vomiting may cause aspiration pneumonia. Treat symptomatically.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

None known.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: 75 °C
Upper and lower flammable (explosive) limits in air: Not applicable.
Auto-ignition temperature: 265 °C
Flammability: Combustible liquid.
Hazardous combustion products: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.
Conditions under which flammability could occur: Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back. Keep fire exposed containers cool by spraying with water.
Extinguishing media: Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist, (avoid use of water jet). Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.
Sensitivity to explosion by mechanical impact: None known.
Sensitivity to explosion by static discharge: None known.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation.
Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wear full protective clothing and equipment (see Section 8). Rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling or working with the product and before eating, using tobacco, drinking, or using the toilet. Wash contaminated clothing separate from household laundry and before re-use. Keep containers closed when not in use. Keep product, wash or rinse water, and contaminated materials out of water, away from crops, and away from access by people, animals and birds.
Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.
National Fire Code classification: Combustible liquid, Class IIIA.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

CONSULT THE PRODUCT LABEL FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS.

Personal protective equipment for each exposure route:
General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, or handling tobacco.

INGESTION:	Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.
EYES:	Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
SKIN:	Where contact is likely, wear chemical-resistant gloves (such as nitrile or butyl), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
INHALATION:	A respirator is not normally required when handling this substance. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light amber to amber liquid.
Formulation Type: Micro Emulsion Concentrate.
Odour: Ether-like.
pH: 2-6 (1% aqueous solution).
Vapour pressure and reference temperature: 8.25×10^{-13} mmHg @ 20 °C (Azoxystrobin Technical)
Vapour density: Not available.
Boiling point: Not available.
Melting point: Not applicable.
Freezing point: Not available.
Specific gravity or density: 1.08 g/mL @ 20 °C.
Evaporation Rate: Not available.
Water/oil partition coefficient: Not available.
Odour threshold: Not available.
Viscosity: Not available.
Solubility in Water: 6 mg/L @ 20 °C (Azoxystrobin Technical)

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.
Conditions to avoid: None known.
Incompatibility with other materials: None known.
Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.
Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	Slightly Toxic Oral (LD50 Rat):	1,714 mg/kg body weight
Dermal:	Practically Non-Toxic Dermal (LD50 Rat):	> 5,000 mg/kg body weight
Inhalation:	Practically Non-Toxic Inhalation (LC50 Rat):	> 6.4 mg/L air - 4 hours
Eye Contact:	Moderately Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Azoxystrobin: Shows weak chromosomal damage in mammalian cells at cytotoxic levels. Negative in whole animal assays for chromosomal and DNA damage at high dosages ($\geq$ 2,000 mg/kg). In rabbits, no effect was observed up to the highest dose level (500 mg/kg/day). In rats, developmental effects were seen only at maternally toxic doses (100 mg/kg/day).

Chronic/Subchronic Toxicity Studies

Azoxystrobin: In a rat 90-day feeding study, liver toxicity was observed at 2,000 ppm. This was manifest as gross distension of the bile duct, increased numbers of lining cells and inflammation of the duct. No toxicologically significant effects were seen in repeat dose dog studies. Data reviews do not

indicate any potential for endocrine disruption. There is no evidence of neurotoxicity in any of the studies conducted with azoxystrobin.

Carcinogenicity

Azoxystrobin: No carcinogenic effects observed in rats or mice at doses up to the maximum tolerated dose.

Other Toxicity Information:

None.

Toxicity of Other Components

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the "other components" in the formulation.

Tetrahydrofurfuryl Alcohol (THFA)

Inhalation of vapours at high concentrations can cause central nervous system effects (dizziness, headache), irritation to eyes or respiratory tract. Chronic overexposure may affect the kidney.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredient

Azoxystrobin:	Liver.

Inert Ingredients

Tetrahydrofurfuryl Alcohol	CNS, kidney.

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

HERITAGE MAXX is a fungicide that is mixed with water and used for the control of various diseases on selected vegetation. The active ingredient, azoxystrobin, is practically nontoxic to insects (bees) and birds, but is moderately to highly toxic to fish and aquatic invertebrates (water flea).

Eco-Acute Toxicity

Azoxystrobin:

Bees LC_{50}/EC_{50}	> 200 µg/bee
Invertebrates (Water Flea) LC_{50}/EC_{50}	0.280 ppm
Fish (Trout) LC_{50}/EC_{50}	0.47 ppm
Fish (Bluegill) LC_{50}/EC_{50}	1.1 ppm
Birds (8-day dietary - Bobwhite Quail) LC_{50}/EC_{50}	> 5,290 ppm
Birds (8-day dietary - Mallard Duck) LC_{50}/EC_{50}	> 5,290 ppm

Eco-Chronic Toxicity

Azoxystrobin:

Invertebrates: Daphnia (Water Flea)	
21-Day Chronic EC50	0.15 mg/L
Fish: Fathead minnow: 28 Day NOEC	0.15 mg/L
Bird: Mallard duck: 28 Day NOEC	1,200 mg/kg

Environmental Fate

The active ingredient, azoxystrobin, has a low bioaccumulation potential, low to moderate mobility in soil, but is moderately persistent to persistent in soil or water. The dissipation half-life in soil is 54 - 135 days and in water it is 187 - 239 days. The main route of degradation is by microbial degradation, hydrolysis, and formation of bound residues. For HERITAGE MAXX, the bulk material sinks in water (after 24 h) but will eventually dissolve into an emulsion.

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL
Not Regulated.

IATA CLASSIFICATION - AIR
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Azoxystrobin)
Hazard Class or Division: Class 9
Identification Number: UN 3082
Packing Group: PG III
Packing Auth.: 914

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.
This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 28393

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Crop Protection Canada, Inc.
1-87- SYNGENTA (1-877-964-3682)

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MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection Canada, Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3

In Case of Emergency, Call
1-800-327-8633 (FAST MED)

Date of MSDS Preparation (Y/M/D): 2005-06-01

Supersedes date (Y/M/D): NEW

MSDS prepared by:
Department of Regulatory & Biology Development
Syngenta Crop Protection Canada, Inc.

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: **DACONIL® Ultrex Fungicide**
Registration Number: 28354 (Pest Control Products Act)
Chemical Class: Chlorinated benzonitrile fungicide.
Synonym: None

Formulation No.: A12836A

Active Ingredient (%): Chlorothalonil (82.5 %) CAS NO.: 1897-45-6
Chemical Name : Tetrachloroisophthalonitrile
Product Use: A granular fungicide that is mixed with water for use on turf and registered ornamental crops. Please refer to product label for further details.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Kaolin Clay (CAS # 1332-58-7)	15 mg/m³ TWA (total); 5 mg/m³ TWA (respirable)	2 mg/m³ TWA (respirable)	10 mg/m³ TWA (total); 5 mg/m³ TWA (respirable)**	No	Not Established
Crystalline Silica, Quartz (CAS No. 14808-60-7)	10 mg/m³/ (%SiO2+2) (respirable dust)	0.05 mg/m³ (respirable silica)	0.05 mg/m³ (respirable dust)**	IARC Group 2A	Yes
Chlorothalonil (82.5 %)	Not Established	Not Established	0.1 mg/m³ TWA (possible skin and respiratory sensitizer) ***	IARC Group 2B	Not Established

** Recommended by NIOSH
*** Syngenta Occupational Exposure Limit (OEL)
† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications. Syngenta Hazard Category: C, S

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

An extremely severe eye irritant; may cause irreversible eye damage. Mild to moderate skin irritant and skin sensitizer. Causes respiratory tract irritation and possible respiratory sensitization.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Brown granules
Odour: Slight.

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

EYE CONTACT:	Flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice.
SKIN CONTACT:	Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation occurs.
INHALATION:	Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is laboured, give oxygen. Obtain immediate medical attention.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Provided the patient is conscious, wash out mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Treat symptomatically.
Persons suffering with temporary allergic skin reactions may respond to treatment with oral antihistamines and topical or oral steroids.

If in eyes, the upper and lower lids should be retracted and irrigated, and any particulate matter should be carefully removed from the conjunctival fornix. Irrigation should be continued until the conjunctival sac is neutral on pH testing with universal indicator paper. Fluroscein staining is required to reveal the extent of corneal or conjunctival epithelial loss. Topical antibiotic ointments are indicated when corneal epithelial damage is identified. Use of steroid eye drops is not advocated unless expressly requested by an Ophthalmologist.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

Asthma or other respiratory conditions may be aggravated by chemical irritants.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: Not applicable.
Upper and lower flammable (explosive) limits in air: Not applicable.
Auto-ignition temperature: Not applicable.
Flammability: Not flammable.
Hazardous combustion products: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.
Conditions under which flammability could occur: Keep fire exposed containers cool by spraying with water.
Extinguishing media: Use water fog or mist, (avoid use of water jet), foam, carbon dioxide, dry powder or halon extinguishant. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.
Sensitivity to explosion by mechanical impact: None known.
Sensitivity to explosion by static discharge: None known.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation.
Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Scoop or sweep up material, keeping dust to a minimum, and place into a disposable container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after working with product, and before eating, handling tobacco, drinking, or using the toilet. Wash contaminated clothing separate from household laundry before re-use. Keep containers closed when not in use. Keep product, wash or rinse water, and contaminated materials out of water, away from crops, and away from access by people, animals and birds.
Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

National Fire Code classification: Not specified.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Personal protective equipment for each exposure route:
General: Avoid breathing vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, or handling tobacco.

INGESTION: Do not eat, drink, handle tobacco or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

EYES: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

SKIN: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

INHALATION: A respirator is not normally required when handling this substance. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapour cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Brown granules.
Formulation Type: Granular solid.
Odour: Slight.
pH: 8 – 10.
Vapour pressure and reference temperature: 5.7×10^{-7} mmHg @ 25 °C (Chlorothalonil Technical).
Vapour density: Not available.
Boiling point: > 350 °C.
Melting point: 250 °C.
Freezing point: Not applicable.
Specific gravity or density: 0.61g/cm^3 @ 25 °C.
Evaporation Rate: Not available.
Water/oil partition coefficient: Not available.
Odour threshold: Not available.
Viscosity: Not available.
Solubility in Water: 0.81 mg/L @ 25 °C (Chlorothalonil Technical).

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.
Conditions to avoid: Unstable under highly alkaline conditions.
Incompatibility with other materials: None known.
Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.
Hazardous polymerization: Not known to occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	Practically Non-Toxic Oral (LD50 Rat):	> 5,000 mg/kg body weight
Dermal:	Slightly Toxic Dermal (LD50 Rat):	> 2,000 mg/kg body weight
Inhalation:	Practically Non-Toxic Inhalation (LC50 Rat):	See "Other Toxicity Information", Sec. 11
Eye Contact:	Corrosive (Rabbit)	
Skin Contact:	Mildly Irritating (Rabbit)	
Skin Sensitization:	Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Chlorothalonil: No evidence of adverse developmental effects in rabbit and rat studies.

Chronic/Subchronic Toxicity Studies

Chlorothalonil: In dogs, 1 years administration caused a significant decrease in body weight gain and increases in absolute liver and kidney weights.
Neurotoxicity: No evidence in regulatory studies.

Carcinogenicity

Chlorothalonil: No evidence of carcinogenicity in dogs after administration for up to one year. Treatment related increases in the incidence of renal tubular adenoma and carcinoma were observed in rats and male mice. Squamous cell adenomas and carcinomas were also observed in the forestomach of both species. However, the forestomach tumors seen in rodent studies are not relevant to human health as humans do not possess an anatomical equivalent of the rodent forestomach. The relevance of renal tumors to human health is unclear. However, metabolism data suggest that the dog, a species that is resistant to chlorothalonil-induced renal injury, may be more representative of humans than the rat. Subsequently, IARC identifies chlorothalonil as a 2B carcinogen (possibly carcinogenic to humans).

Other Toxicity Information:

Studies on rats and mice have suggested that technical chlorothalonil (97%), when fed at high levels in the diet, may have oncogenic potential to these laboratory animals. However, neither chlorothalonil nor its metabolites interact with DNA and thus are not mutagenic. Tumor formation has been related to a non-genotoxic mechanism of action for which threshold levels have been established in rats and mice. Comprehensive dietary and worker exposure studies have shown exposure levels for humans to be well below these threshold levels. In addition, surveillance of chlorothalonil plant workers for over twenty years has not demonstrated any increase in oncogenic potential to humans.

May cause sensitization by skin contact. Exposure of the skin to chlorothalonil may result in weak contact dermatitis. May cause irritation of the gastrointestinal tract following ingestion of large amounts. May be irritating to the respiratory tract.

Rat studies using finely milled chlorothalonil material (98.2% pure) showed an LC_{50} of 100 mg/m³ (0.1 mg/l). At all exposure concentrations there were clinical signs of respiratory tract irritation. There was no evidence of systemic effects resulting from these tests. This data indicate that chlorothalonil, especially finely ground material, presents a significant acute inhalation hazard. Since the end product is granular with little dust potential, inhalation toxicity is not of concern during shipping and handling. Therefore, the end product is unlikely to cause harmful effects when handled and used as directed on the label.

Toxicity of Other Components

Test results reported in Section 11 for the finished product take into account any acute hazards related to the excipient ingredients in the formulation.

Crystalline Silica, Quartz

Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. Listed as an IARC (Group 2A) carcinogen; classified as a possible human carcinogen. Experimental animals exposed to crystalline silica developed respiratory tract cancers.

Kaolin Clay

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long term overexposure may affect respiratory function in some individuals.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredient

Chlorothalonil:	Skin, lung, eye, kidney.

Inert Ingredients

Crystalline Silica, Quartz	Respiratory tract.
Kaolin Clay	Respiratory tract.

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

DACONIL Ultrex is a fungicide that is mixed with water and applied as a spray for control of plant diseases on turf and registered ornamental crops. The active ingredient, chlorothalonil, is practically nontoxic to plants, algae, mammals, birds and insects (bees), but is highly toxic to fish and aquatic invertebrates (water flea).

Eco-Acute Toxicity

Chlorothalonil:

Bees LC_{50}/EC_{50}	> 181 µg/bee
Invertebrates (Water Flea) LC_{50}/EC_{50}	0.070 ppm
Fish (Trout) LC_{50}/EC_{50}	0.047 ppm
Fish (Bluegill) LC_{50}/EC_{50}	0.060 ppm
Birds (8-day dietary - Bobwhite Quail) LC_{50}/EC_{50}	> 5,200 ppm
Birds (8-day dietary - Mallard Duck) LC_{50}/EC_{50}	> 5,200 ppm

Eco-Chronic Toxicity

Chlorothalonil:

Invertebrates: *Daphnia* (Water Flea)	
21-Day reproduction MATC	0.05 mg/L
Fish: Fathead minnow: 21 Day MATC	0.003-0.0065 mg/L

Environmental Fate

The active ingredient, chlorothalonil has a low bioaccumulation potential, and low mobility in soil but is not persistent in soil or water. The dissipation half-life in soil is 10-60 days and in water it is <8 days. The main route of degradation is by microbial degradation and formation of bound residues.

For DACONIL Ultrex, the bulk material sinks in water (after 24 h) and dissolves into an emulsion.

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local

regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL
Not Regulated

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.
This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 28354

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Crop Protection Canada, Inc.
1-87-SYNGENTA (1-877-964-3682)

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Monsanto Canada
Material Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

Product name
Roundup® Ultra Liquid Herbicide

PCP Reg. No.
27764
Chemical name
Not applicable.
Synonyms
None.
Company
Monsanto Canada, 67 Scurfield Boulevard, Winnipeg, MB, R3Y 1G4
Telephone: 204-985-1000 or 800-667-4944, **Fax:** 204-488-9599
Emergency numbers
FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CANUTEC - Day or Night: 613-996-6666 (collect calls accepted) or MONSANTO: 314-694-4000 (collect calls accepted).
FOR MEDICAL EMERGENCY - Day or Night: 314-694-4000 (collect calls accepted).

2. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient
Potassium salt of N-(phosphonomethyl)glycine; {Potassium salt of glyphosate}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Potassium salt of glyphosate	70901-12-1	49
Other ingredients		51

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

3. HAZARDS IDENTIFICATION

Emergency overview
Appearance and odour (colour/form/odour): Amber / Liquid / Sweet

DANGER!
EYE AND SKIN IRRITANT

Potential health effects
Likely routes of exposure
Skin contact, eye contact, inhalation
Eye contact, short term
May cause temporary eye irritation.
Skin contact, short term
Irritating to skin.
Inhalation, short term
Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

4. FIRST AID MEASURES

Eye contact
Immediately flush with plenty of water.
Continue for at least 15 minutes.
If easy to do, remove contact lenses.
If there are persistent symptoms, obtain medical advice.

Skin contact
Immediately wash affected skin with plenty of water.
Continue for at least 15 minutes.
Take off contaminated clothing, wristwatch, jewellery.
Wash clothes and clean shoes before re-use.
If there are persistent symptoms, obtain medical advice.

Inhalation
Remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.

Ingestion
Immediately offer water to drink.
Do NOT induce vomiting unless directed by medical personnel.
If symptoms occur, get medical attention.

Advice to doctors
This product is not an inhibitor of cholinesterase.

Antidote
Treatment with atropine and oximes is not indicated.

5. FIRE-FIGHTING MEASURES

Flash point
Does not flash.

Extinguishing media
Recommended: Water, dry chemical, carbon dioxide (CO2), foam

Unusual fire and explosion hazards
Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

Hazardous products of combustion
Carbon monoxide (CO), phosphorus oxides (PxOy), nitrogen oxides (NOx)

Fire fighting equipment
Self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protection recommended in section 8.

Environmental precautions
SMALL QUANTITIES:
Low environmental hazard.
LARGE QUANTITIES:
Minimise spread.
Keep out of drains, sewers, ditches and water ways.

Methods for cleaning up
SMALL QUANTITIES:
Flush spill area with water.
LARGE QUANTITIES:
Absorb in earth, sand or absorbent material.
Dig up heavily contaminated soil.
Collect in containers for disposal.
Refer to section 7 for types of containers.
Flush residues with small quantities of water.
Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling
Avoid contact with eyes, skin and clothing.
Avoid breathing vapour or mist.
When using do not eat, drink or smoke.
Wash hands thoroughly after handling or contact.
Wash contaminated clothing before re-use.
Thoroughly clean equipment after use.
Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.
Refer to section 13 for disposal of rinse water.
Emptied containers retain vapour and product residue.
FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.

Storage
Compatible materials for storage: stainless steel, aluminium, fibreglass, plastic, glass lining
Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.
Keep out of reach of children.
Keep away from food, drink and animal feed.
Keep only in the original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
Potassium salt of glyphosate	No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

Engineering controls
Provide local exhaust ventilation.
Have safety shower available at locations where skin contact can occur.

Eye protection
If there is significant potential for contact:
Wear chemical goggles.

Skin protection
Wear chemical resistant gloves.
If there is potential for contact:
Wear chemical resistant clothing/footwear.

Respiratory protection
If airborne exposure is excessive:
Wear respirator.
Full facepiece/hood/helmet respirator replaces need for chemical goggles.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Amber
Form:	Liquid
Odour:	Sweet
Flash point:	Does not flash.
Partition coefficient (log Pow):	-3.2 @ 25 °C (glyphosate)

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions of handling and storage.

Hazardous decomposition
Thermal decomposition: Hazardous products of combustion: see section 5.

Materials to avoid/Reactivity
Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Acute oral toxicity
Rat, LD50: > 5,000 mg/kg body weight
Practically non-toxic.
FIFRA category IV.

Acute dermal toxicity
Rat, LD50: > 5,000 mg/kg body weight
Practically non-toxic.
FIFRA category IV.

Acute inhalation toxicity
Rat, LC50, 4 hours, aerosol:
Practically non-toxic.
FIFRA category IV.

No 4-hr LC50 at the maximum tested concentration.

Skin irritation

Rabbit, 3 animals, OECD 404 test:

Days to heal: 28
Primary Irritation Index (PII): 4.9/8.0
Other effects: skin blanching, eschar formation
Severe irritation.
FIFRA category II.

Eye irritation

Rabbit, 3 animals, OECD 405 test:

Days to heal: 7
Moderate irritation.
FIFRA category III.

Skin sensitization

Guinea pig, Buehler test:

Positive incidence: 0 %

N-(phosphonomethyl)glycine; (glyphosate)

Mutagenicity

In vitro and in vivo mutagenicity test(s):

Not mutagenic.

Repeated dose toxicity

Rabbit, dermal, 21 days:

NOAEL toxicity: > 5,000 mg/kg body weight/day
Target organs/systems: none
Other effects: none

Rat, oral, 3 months:

NOAEL toxicity: > 20,000 mg/kg diet
Target organs/systems: none
Other effects: none

Chronic effects/carcinogenicity

Mouse, oral, 24 months:

NOEL tumour: > 30,000 mg/kg diet
NOAEL toxicity: ~ 5,000 mg/kg diet
Tumours: none
Target organs/systems: liver
Other effects: decrease of body weight gain, histopathologic effects

Rat, oral, 24 months:

NOEL tumour: > 20,000 mg/kg diet
NOAEL toxicity: ~ 8,000 mg/kg diet
Tumours: none
Target organs/systems: eyes
Other effects: decrease of body weight gain, histopathologic effects

Toxicity to reproduction/fertility

Rat, oral, 3 generations:

NOAEL toxicity: > 30 mg/kg body weight
NOAEL reproduction: > 30 mg/kg body weight
Target organs/systems in parents: none
Other effects in parents: none
Target organs/systems in pups: none
Other effects in pups: none

Developmental toxicity/teratogenicity

Rat, oral, 6 - 19 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight
NOAEL development: 1,000 mg/kg body weight
Other effects in mother animal: decrease of body weight gain, decrease of survival

Developmental effects: weight loss, post-implantation loss, delayed ossification
Effects on offspring only observed with maternal toxicity.
Rabbit, oral, 6 - 27 days of gestation:
NOAEL toxicity: 175 mg/kg body weight
NOAEL development: 175 mg/kg body weight
Target organs/systems in mother animal: none
Other effects in mother animal: decrease of survival
Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Similar formulation

Aquatic toxicity, fish
Bluegill sunfish (Lepomis macrochirus):
Acute toxicity, 96 hours, static, LC50: 5.2 mg/L
Moderately toxic.
Common carp (Cyprinus carpio):
Acute toxicity, 96 hours, static, LC50: 4.0 mg/L
Moderately toxic.
Aquatic toxicity, invertebrates
Water flea (Daphnia magna):
Acute toxicity, 48 hours, static, EC50: 8.0 mg/L
Moderately toxic.

Similar formulation

Aquatic toxicity, algae/aquatic plants
Green algae (Selenastrum capricornutum):
Acute toxicity, 72 hours, static, EbC50 (biomass): 5.1 mg/L
Moderately toxic.
Arthropod toxicity
Honey bee (Apis mellifera):
Contact, 48 hours, LD50: > 265 µg/bee
Practically non-toxic.
Honey bee (Apis mellifera):
Oral, 48 hours, LD50: > 285 µg/bee
Practically non-toxic.
Soil organism toxicity, invertebrates
Earthworm (Eisenia foetida):
Acute toxicity, 14 days, LC50: > 2,700 mg/kg dry soil
Practically non-toxic.
Soil organism toxicity, microorganisms
Nitrogen and carbon transformation test:
48 L/ha, 28 days: Less than 25% effect on nitrogen or carbon transformation processes in soil.

N-(phosphonomethyl)glycine; (glyphosate)

Avian toxicity
Bobwhite quail (Colinus virginianus):
Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet
No more than slightly toxic.
Mallard duck (Anas platyrhynchos):
Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet

No more than slightly toxic.

Bobwhite quail (Colinus virginianus):

Acute oral toxicity, single dose, LD50: > 3,851 mg/kg body weight

Practically non-toxic.

Bioaccumulation

Bluegill sunfish (Lepomis macrochirus):

Whole fish: BCF: < 1

No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 2 - 174 days

Koc: 884 - 60,000 L/kg

Adsorbs strongly to soil.

Water, aerobic:

Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

Product

Keep out of drains, sewers, ditches and water ways.
Recycle if appropriate facilities/equipment available.
Burn in proper incinerator.
Follow all local/regional/national/international regulations.

Container

See the individual container label for disposal information.
Emptied containers retain vapour and product residue.
Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.
Empty packaging completely.
Triple or pressure rinse empty containers.
Do NOT contaminate water when disposing of rinse waters.
Ensure packaging cannot be reused.
Do NOT re-use containers.
Store for collection by approved waste disposal service.
Recycle if appropriate facilities/equipment available.
Follow all local/regional/national/international regulations.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Based upon the preliminary information available, this material is classified as non-hazardous for transport.

15. REGULATORY INFORMATION

PCPA registered.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.
Follow all local/regional/national/international regulations.
Please consult supplier if further information is needed.
In this document the British spelling was applied.

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE Pest Management Regulatory (PMRA)- APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by product labeling and provincial legislation, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the PMRA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

MATERIAL SAFETY DATA SHEET

Sanex TRI-KIL TURF

SECTION I

MANUFACTURER'S NAME: SANEX INC.
2695 SLOUGH STREET
MISSISSAUGA, ONTARIO
L4T 1G2
EMERGENCY TELEPHONE NO.: (416) 677-4890
CHEMICAL NAME AND SYNONYMS: (2,4-Dichlorophenoxy) acetic acid 3,6-Dichloro-2-methoxy benzoic acid and 2-(4-chloro-2-methyl phonoxy propionic acid
CHEMICAL FAMILY: Chlorinated Phenoxy Acids
FORMULA: C10H13C12NO3 C12H18ClNo3

SECTION II - HAZARDOUS INGREDIENTS

COMPONENT	%	TLV (Units)
2,4-D CAS #002008-39-1	20.2	10(15) as acid
Dicamba CAS #2300-66-5	4.4	ND LD50 = 3.5 g/kg
MCPP CAS #7085-19-0	21.2	10(15) as acid

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES	%	TLV (Units)
Usually quite compatible		

SECTION III - PHYSICAL DATA

BOILING POINT (32 deg C): 100 deg C
VAPOR PRESSURE (mm Hg): ND (Water)
VAPOR DENSITY (AIR = 1): ND (Water)
SOLUBILITY IN WATER: Miscible
SPECIFIC GRAVITY (H2O = 1): 1.151
PERCENT VOLATILE BY VOLUME (%): 52
EVAPORATION RATE (-1):
APPEARANCE AND ODOR: Clear dark brown liquid - ammonia odor
pH 8.5

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used): ND
FLAMMABLE LIMITS:
UPPER:
LOWER:
EXTINGUISHING MEDIA: Foam, CO2 and water fog
SPECIAL FIRE FIGHTING PROCEDURES: Self contained breathing apparatus. Prevent water used in fire fighting from entering water supplies.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Water based - may boil and then burn. Noxious fumes under fire conditions.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: 10 mg/cu M as acid
EFFECTS OF OVEREXPOSURE: No cases of human poisoning know extrapolating from animal studies; coma, occasional generalized twitching, grand/mal. convulsions opisthotonas and rapid pulse.
EMERGENCY AND FIRST AID PROCEDURES: Treat symptomatically. If swallowed induce vomiting by placing finger in throat.

SECTION VI - REACTIVITY DATA

STABILITY: Stable
CONDITIONS TO AVOID: Elevated temperatures
INCOMPATIBILITY (Materials to avoid):
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrochloric Acid under fire conditions
HAZARDOUS POLYMERIZATION: Will Not Occur
CONDITIONS TO AVOID:

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain and recover free liquid. Absorb balance on inert material, shovel into drums. Rinse with water & absorb on inert material, shovel into drums.
WASTE DISPOSAL METHOD: Bury wastes in approved landfill away from water supplies and desirable vegetation.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type): None likely needed. NIOSH approved mist mask if mists are generated
VENTILATION: Gen. Dilution
LOCAL EXHAUST:
MECHANICAL (General):
SPECIAL:
OTHER:
PROTECTIVE GLOVES: Rubber
EYE PROTECTION:
OTHER PROTECTIVE EQUIPMENT: Clothing sufficient to prevent skin contact. Eye-wash facilities.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTION TO BE TAKEN IN HANDLING AND STORING: Maximum storage temperature is 50 deg C and minimum is 0 deg C. DO NOT store under sunlight. Store in cool area away from fertilizers & food stuffs.
OTHER PRECAUTIONS: Avoid contact. Avoid breathing mists and avoid contamination of water supplies. KEEP OUT OF REACH OF CHILDREN.

COMPAS Code: 11070040

Material Safety Data Sheet

Dow AgroSciences™

Eagle™ WSP Turf and Ornamental

™Trademark of Dow AgroSciences LLC

In case of emergency Call CANUTEC at 613 996 6666

1. Product Identification:

Product name: Eagle WSP Turf and Ornamental Fungicide
Product use: A protectant and curative fungicide recommended for the control of certain diseases in turf and ornamental shrubs.
Product code number: 52339
GMID numbers: 173210
Effective date: March 20, 2009

Supplier:
Dow AgroSciences Canada Inc
Suite 2100, 450 - 1st Street SW,
Calgary, Alberta.
Canada, T2P 5H1
www.dowagro.ca

This product is regulated under authority of the Pest Control Products Act

2. Composition:

Component	CAS Number	% (w/w)
Myclobutanil	88671-89-0	40.0
Kaolin	1332-58-7	>= 1.5 - <= 39.8
Calcium polysilicate	1344-95-2	4.0
Titanium dioxide	13463-67-7	1.1
Silica, crystalline (quartz)	14808-60-7	0.4
Balance		>= 14.7 - <= 53.0

Note: The above ingredients are those contained in the formulation and do not reflect the components of the water-soluble packaging, which are considered to be non-hazardous, according to OSHA definition.

3. Hazard Identification:

Emergency Overview:
A tan powder with a mild odor. May cause eye irritation with corneal injury. May cause skin irritation.

Potential Health Effects:
Eyes: May cause moderate eye irritation. May cause moderate corneal injury.
Skin contact: Brief contact may cause slight skin irritation with local redness.
Skin absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Ingestion: Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.
Inhalation: Dust may cause irritation of the upper respiratory tract (nose and throat) and lungs.

4. First Aid Measures:

Eyes: Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first five minutes, and then continue rinsing eyes. Call a poison control center or doctor for treatment advice.
Skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.
Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc.) Call a poison control center or doctor for treatment advice.

Note to physician:
May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if

available, the product container or label with you when calling a poison control center or doctor, or going for treatment.
Medical conditions aggravated by exposure: Repeated excessive exposure may aggravate preexisting lung disease.
Emergency personnel protection: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

5. Fire-fighting Measures:
Flash point: Not applicable
Flammable limits: Not applicable
Auto-ignition temperature: Not applicable
Extinguishing media: Water fog or fine spray, Use CO2, dry chemical or foam.
Do not use direct water stream. May spread fire. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function. **Fire fighting procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Do not use direct water stream. May spread fire. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.
Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.
Unusual fire and explosion hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur.
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: nitrogen oxides, hydrogen cyanide, hydrogen chloride, carbon monoxide and carbon dioxide.

6. Accidental Release Measures:
Steps to be Taken If Material is Released or Spilled: Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: contact CANUTEC at 613 996 6666 and local authorities.
Personal Precautions: Use appropriate safety equipment. For additional information, refer to section 8, Exposure Controls and Personal Protection.
Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage:
Handling
General Handling: Good housekeeping and controlling of dusts are necessary for safe handling of this product. Keep out of reach of children. Do not swallow. Avoid breathing dust or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.
Storage

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Dow AgroSciences™ **Eagle™ WSP Turf and Ornamental**

In case of emergency Call CANUTEC at 613 996 6666

Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls, Personal Protection and Exposure Limits:

Exposure limits

Component	List	Type	Value
Myclobutanil	Dow IHG	TWA	0.5 mg/m3
Silica, crystalline (quartz)	CAD AB OEL	TWA Respirable particles.	0.1 mg/m3
	CAD ON OEL	TWA Respirable fraction.	0.10 mg/m3
	ACGIH	TWA Respirable fraction.	0.025 mg/m3
	OEL (QUE)	TWA Respirable dust.	0.1 mg/m3 Exposure must be minimized.
	CAD BC OEL	TWA Respirable fraction.	0.025 mg/m3
Calcium polysilicate	OEL (QUE)	TWA Total dust.	10 mg/m3
	CAD AB OEL	TWA	10 mg/m3
	CAD ON OEL	TWA Total dust.	10 mg/m3
	ACGIH	TWA	10 mg/m3 The value is for particulate matter containing no asbestos and <1% crystalline silica.
	CAD BC OEL	TWA Respirable fraction.	3 mg/m3
	CAD BC OEL	TWA Total dust.	10 mg/m3
	OEL (QUE)	TWA Total dust.	10 mg/m3
Kaolin	OEL (QUE	TWA Total dust.	10 mg/m3
	CAD AB OEL	TWA Respirable particles.	2 mg/m3
	CAD BC OEL	TWA Respirable.	2 mg/m3
	CAD ON OEL	TWA Respirable.	2 mg/m3
	ACGIH	TWA Respirable fraction.	2 mg/m3' The value is for particulate matter containing no asbestos and <1% crystalline silica.
	CAD MB OEL	TWA Respirable fraction.	1 mg/m3
	OEL (QUE)	TWA Respirable dust.	5 mg/m3
Titanium Dioxide	OEL (QUE)	TWA Total dust.	10 mg/m3
	CAD ON OEL	TWA Total dust.	10 mg/m3
	ACGIH	TWA	10 mg/m3
	CAD AB OEL	TWA	10 mg/m3
	CAD BC OEL	TWA Respirable fraction.	3 mg/m3
	CAD BC OEL	TWA Total dust.	10 mg/m3
	OEL (QUE)	TWA Total dust.	10 mg/m3

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: organic vapor cartridge with a particulate pre-filter.

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In case of emergency Call CANUTEC at 613 996 6666

Skin protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.
Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: neoprene, nitrile, and polyvinyl chloride (PVC or vinyl). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: other chemical which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reaction to glove materials, as well as the instructions/specifications provided by the glove supplier.
Eyes: Use chemical goggles.

9. Physical and Chemical Properties:

Boiling point: Not applicable
Vapor pressure: Not applicable
Volatility: 0%
pH: 7.5 to 8.5 (as an aqueous suspension)
Appearance: Tan powdered solid
Odor: Mild
Coefficient of water/oil distribution: not available
Bulk density: 300 to 350 kg/m^3
Evaporation rate: Not applicable
Solubility in water: Dispersible
Viscosity: Not applicable
Odor threshold: Not available
Melting point: Not available

10. Stability and Reactivity:

Stability: Stable under recommended storage conditions. See Storage, Section 7.
Conditions to avoid: Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Avoid moisture. Avoid direct sunlight.
Incompatibility: Avoid contact with: strong oxidizers.
Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: carbon monoxide, carbon dioxide, hydrogen chloride, hydrogen cyanide, and nitrogen oxides.
Hazardous polymerization: Will not occur

11. Toxicological Information:

Skin absorption: The dermal LD50 has not been determined. For the active ingredient, LD50 (rabbit) is >5,000 mg/kg.
Ingestion: Single dose oral LD50 has not been determined. For the active ingredient, LD50 (female rat) is 3,129 mg/kg.
Inhalation: The LC50 has not been determined. For the active ingredient, LC50, 4 h, aerosol (rat) is >5.88 mg/l. No deaths occurred at this concentration.
Sensitization: For the active ingredient, did not cause allergic skin reactions when tested in guinea pigs.
Repeated Dose Toxicity: For the active ingredient, in animals, effects have been reported on the following organs: liver, testes, adrenal gland, kidney and thyroid. Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.
Chronic Toxicity and Carcinogenicity: The active ingredient did not cause cancer in laboratory animals. Crystalline silica has been shown to cause cancer in laboratory animals and humans. Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titanium dioxide was not carcinogenic in laboratory animals in lifetime feeding studies.
Developmental Toxicity: The active ingredient did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses nontoxic to the mother.
Reproductive Toxicity: For the active ingredient, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

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Genetic Toxicology: For the active ingredient, in-vitro and animal genetic toxicity studies were negative. For the minor component(s), in-vitro genetic toxicity studies were negative in some cases and positive in other cases.

12. Ecological Information:

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING

For the active ingredient, potential for mobility in soil is low (Koc between 500 and 2000). Bioconcentration potential is low (BCF <100 or Log Pow <3).

ECOTOXICITY

For the active ingredient, material is highly toxic to aquatic organisms on an acute basis (LC50 or EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
Material is practically non-toxic to birds on a dietary basis (LC50 >5000 ppm).
Material is highly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

Fish Acute & Prolonged Toxicity
For the active ingredient
LC50, rainbow trout (Oncorhynchus mykiss), static, 96 h: 2.3 – 4.2 mg/l
Aquatic Invertebrate Acute Toxicity
As active ingredient
EC50, eastern oyster (Crassostrea virginica), flow-through, 96 h, shell growth inhibition: 0.72 mg/l
EC50, water flea Daphnia magna, static 48 h, immobilization: 17 mg/l
Aquatic Plant Toxicity
As active ingredient
EC50, green alga Pseudokirchneriella subcapitata (formerly known as Selenastrum capricornutum), biomass growth inhibition, 96 h: 1.0 mg/l
Toxicity to Non-mammalian Terrestrial Species
For the active ingredient
dietary LC50, bobwhite (Colinus virginianus): >5000 ppm
dietary LC50, mallard (Anas platyrhynchos): >5000 mg/kg diet
oral LD50, bobwhite (Colinus virginianus): 510 mg/kg bodyweight
contact LD50, Honey bee (Apis mellifera): >100 micrograms/bee

13. Disposal Considerations:

Unused unwanted product: Contact Dow AgroSciences or your provincial regulatory agency for disposal information.
Container disposal: Refer to the product label for instructions regarding cleaning and disposal of empty pesticide containers. If these instructions are missing or not understood, contact Dow AgroSciences at 800 667 3852 or your provincial regulatory agency for direction.

14. Transport Information:

TDG Small container
NOT REGULATED

TDG Large container
NOT REGULATED

IMDG
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Technical Name: MYCLOBUTANIL
Hazard Class: 9 ID Number: UN3077
Packing Group: PG III
Marine Pollutant: Yes

ICAO/IATA
NOT REGULATED

15. Regulatory Information:

Pest Control Products Act registration number: 26585
For information phone: 800 667 3852
Master reference: 007705
MSDS status: Revised sections: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 & 14
Date of last revision: July 6, 2006

16. Other Information:

National Fire Code classification: Not applicable
NFPA ratings: Health: 2; Flammability: 1; Reactivity: 0.
Notice: The information contained in this Material Safety Data Sheet ("MSDS") is current as of the effective date shown in Section 1 of this MSDS and may be subject to amendment by Dow AgroSciences Canada Inc. ("DASCI") at any time. DASCI accepts no liability whatsoever which results in any way from the use of MSDS that are not published by DASCI, or have been amended without DASCI express written

Material Safety Data Sheet

Dow AgroSciences

Eagle™ WSP Turf and Ornamental

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authorization. Users of this MSDS must satisfy themselves that they have the most recent and authorized version of this MSDS and shall bear all responsibility and liability with respect thereto.

Any conflict or inconsistencies as to the contents of this MSDS shall be resolved in favor of DASCI by the most recent version of the MSDS published by DASCI.

Agrium Advanced Technologies

Material Safety Data Sheet

1. Product and company identification

Product name	: 4851001 Granular Fungicide X containing Iprodione
Synonym	: Fungicide on carrier
Trade name	: Not available.
Code	:
Material uses	: Agricultural industry: Soil additive, pesticides, feed additive, etc.
Manufacturer	: Agrium Advanced Technologies, Inc. 10 Craig St. Brantford, ON N3R 7J1
Supplier	: Agrium Advanced Technologies, Inc. 10 Craig St. Brantford, ON N3R 7J1 For general Inquiries call 519-757-0077
Validation date	: Validated by Company on 5/1/2009.
In case of emergency	: Transportation: 1-800-792-8311 Medical: 1-888-670-8123

2. Hazards identification

Physical state	: Solid.
Odor	: Not available.
Emergency overview	:

CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.

Avoid exposure - obtain special instructions before use. Contains material that may cause target organ damage, based on animal data. Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Routes of entry : Not available.

Potential acute health effects

Inhalation	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	: No known significant effects or critical hazards.
Skin	: No known significant effects or critical hazards.
Eyes	: No known significant effects or critical hazards.

Potential chronic health effects

Chronic effects	: Contains material that may cause target organ damage, based on animal data.
Carcinogenicity	: Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin, eyes, stomach.

Over-exposure signs/symptoms

Inhalation	: No specific data.

2 . Hazards identification

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Cellulose	9004-34-6	78.96 - 88.83
kaolin	1332-58-7	0.987 - 4.935
calcium carbonate	471-34-1	0.987 - 4.935
titanium dioxide	13463-67-7	0.987 - 4.935

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops. In case of contact, immediately flush skin with plenty of water. Wash thououghly with soap and water after handling.

'nhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Flammability of the product : No specific fire or explosion hazard.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
metal oxide/oxides

5 . Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Not available.

Special remarks on explosion hazards : Not available.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m³	Other	ppm	mg/m³	Other	ppm	mg/m³	Other	Notations

8 . Exposure controls/personal protection

titanium dioxide	US ACGIH 1/2008	-	10	-	-	-	-	-	-	-	
	AB 6/2008	-	10	-	-	-	-	-	-	-	
	BC 6/2008	-	10	-	-	-	-	-	-	-	[a]
		-	3	-	-	-	-	-	-	-	[b]
	ON 6/2008	-	10	-	-	-	-	-	-	-	[c]
	QC 6/2008	-	10	-	-	-	-	-	-	-	[d]
kaolin	US ACGIH 1/2008	-	2	-	-	-	-	-	-	-	[e]
	AB 6/2008	-	2	-	-	-	-	-	-	-	[f]
	BC 6/2008	-	2	-	-	-	-	-	-	-	[g]
	ON 6/2008	-	2	-	-	-	-	-	-	-	[h]
	QC 6/2008	-	5	-	-	-	-	-	-	-	[i]
Cellulose	US ACGIH 1/2008	-	10	-	-	-	-	-	-	-	
	AB 6/2008	-	10	-	-	-	-	-	-	-	
	BC 6/2008	-	3	-	-	-	-	-	-	-	[b]
		-	10	-	-	-	-	-	-	-	[a]
	ON 6/2008	-	10	-	-	-	-	-	-	-	[c]
	QC 6/2008	-	10	-	-	-	-	-	-	-	[d]
calcium carbonate	AB 6/2008	-	10	-	-	-	-	-	-	-	
	ON 6/2008	-	10	-	-	-	-	-	-	-	
	QC 6/2008	-	10	-	-	-	-	-	-	-	[d]

Form: [a]Total dust [b]Respirable dust [c]total dust [d]Total dust. [e]Respirable fraction [f]Respirable particulate [g]Respirable [h]The notation "respirable" following the name of an agent in this Schedule means that size fraction of the airborne particulate deposited in the gas-exchange region of the respiratory tract and collected during air sampling with a particle size-selective device that, (a) meets the American Conference of Governmental Industrial Hygienists (ACGIH) particle size-selective criteria; and (b) has the cut point of 4 microns at 50 per cent collective efficiency. [i]Respirable dust.

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Other protection : Not available.

8 . Exposure controls/personal protection

Personal protective equipment (Pictograms) : Not available.

9 . Physical and chemical properties

Physical state	: Solid.
Flash point	: Not available.
Auto-ignition temperature	: Not available.
Flammable limits	: Not available.
Color	: Not available.
Odor	: Not available.
Taste	: Not available.
Molecular weight	: Not applicable.
Molecular formula	: Not applicable.
pH	: Not available.
Boiling/condensation point	: Not available.
Melting/freezing point	: Not available.
Critical temperature	: Not available.
Relative density	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Volatility	: Not available.
Odor threshold	: Not available.
Evaporation rate	: Not available.
VOC	: Not available.
Viscosity	: Not available.
Ionicity (in water)	: Not available.
Dispersibility properties	: Not available.
Solubility	: Not available.
Physical/chemical properties comments	: Not available.
Bulk density	: Not available.

10 . Stability and reactivity

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Conditions of reactivity : Not available.

Not available.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	LD Intratracheal	Rat	>100 ug/kg	-
	TDLo Intratracheal	Rat	5 mg/kg	-
	TDLo Intratracheal	Rat	1.6 mg/kg	-
	TDLo Intratracheal	Rat	1.25 mg/kg	-
	TDLo Oral	Rat	60 g/kg	-
Cellulose	LD50 Dermal	Rabbit	>2 g/kg	-
	LD50 Intraperitoneal	Rat	>31600 mg/kg	-
	LD50 Oral	Rat	>5 g/kg	-
	TDLo Oral	Rat	120 g/kg	-
calcium carbonate	LD50 Oral	Rat	6450 mg/kg	-
	TDLo Oral	Rat	60 g/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Not available.					

Conclusion/Summary : Not available.

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
Not available.			

Conclusion/Summary : Not available.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
kaolin	A4	-	-	-	-	-
titanium dioxide	A4	2B	-	-	-	-

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Not available.			

Conclusion/Summary : Not available.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Conclusion/Summary : Not available.

Reproductive toxicity

11 . Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure

Not available.

Conclusion/Summary : Not available.

Synergistic products : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
titanium dioxide	-	Acute LC50 5.5 ppm Fresh water	Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling) - <24 hours	48 hours
	-	Acute LC50 >1000000 ug/L Marine water	Fish - Mummichog - Fundulus heteroclitus	96 hours
calcium carbonate	-	Acute LC50 >56000000 ug/L Fresh water	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours

Conclusion/Summary : Not available.

Biodegradability

Product/ingredient name	Test	Result	Dose	Inoculum

Not available.

Conclusion/Summary : Not available.

Octanol/water partition coefficient : Not available.

Bioconcentration factor : Not available.

Mobility : Not available.

Toxicity of the products of biodegradation : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Waste stream : Not available.

RCRA classification : Not available.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not available.	Not available.	Not available.	-		-
TDG Classification	Not available.	Not available.	Not available.	-		-
Mexico Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States inventory (TSCA 8b) : Not determined.

WHMIS (Canada) : Class D-2A: Material causing other toxic effects (Very toxic).

Canadian lists : **CEPA Toxic substances:** None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory : Not determined.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

EU regulations

Hazard symbol or symbols :

Risk phrases : R40- Limited evidence of a carcinogenic effect.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S2- Keep out of the reach of children.
S36/37- Wear suitable protective clothing and gloves.
S46- If swallowed, seek medical advice immediately and show this container or label.

International regulations

15 . Regulatory information

International lists : **Australia inventory (AICS):** All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

16 . Other information

Label requirements : CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material. Suggested protective clothing might not be adequate. Consult a specialist before handling this product.

Other special considerations : Not available.

References : Not available.

Date of issue : 5/1/2009.

Version : 1

◤ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Bayer CropScience

Material Safety Data Sheet

ROVRAL GREEN GT

MSDS Number: 102000011863
MSDS Version 1.0
Revision Date: 10/05/2005

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name	ROVRAL GREEN GT
MSDS Number	102000011863
PCP Number	24379

Bayer CropScience Inc
#100 - 3131 - 114th Avenue SE
Calgary, AB T2Z 3X2
Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call 1-800-334-7577 (24 hours/day)
For Product Information call 1-888-283-6847

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Iprodione	36734-19-7	23.30

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Physical State liquid

Appearance green

SECTION 4. FIRST AID MEASURES

General Have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin Take off all contaminated clothing immediately. Rinse immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.

Ingestion Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Inhalation Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control

	center or doctor for further treatment advice.
Notes to Physician Treatment	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point	> 93.3 °C / > 199.9 °F
Suitable Extinguishing Media	carbon dioxide (CO2), dry chemical, foam
Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated. Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
Methods for Cleaning Up	Take up with absorbent material (e.g. sand, kieselguhr or a proprietary absorbent material). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional Advice	Use personal protective equipment. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	Handle and open container in a manner as to prevent spillage.
Storing Procedures	Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.
Work/Hygienic Procedures	Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	Follow all label instructions. Train employees in safe use of the product. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
Engineering Controls	Ensure adequate ventilation.
Eye/Face Protection	goggles
Body Protection	Wear long-sleeved shirt and long pants and shoes plus socks.
Respiratory Protection	Under normal conditions, in the absence of other airborne contaminants,the following should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridge/canister approved for use against dusts, mists and fumes, pesticides.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	green
Physical State	liquid
pH	6.0 - 6.5 (100 %) at 20 °C
Density	ca. 1.03 g/cm³ at 20 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Incompatibility	acids bases oxidizing agents
Hazardous Decomposition Products	carbon dioxide (CO2) Carbon monoxide sodium oxides Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Assessment Carcinogenicity
ACGIH
None.
NTP
None.
IARC
None.
OSHA
None.

SECTION 12. ECOLOGICAL INFORMATION

SECTION 13. DISPOSAL CONSIDERATIONS

SECTION 14. TRANSPORT INFORMATION

SECTION 15. REGULATORY INFORMATION

US Federal Regulations
TSCA list
None.
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.
SARA Title III - Section 302 - Notification and Information
None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.

US States Regulatory Reporting
CA Prop65
This product contains a chemical known to the State of California to cause cancer.

Iprodione	36734-19-7

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients
None.

Canadian Regulations
Canadian Domestic Substance List
None.

Environmental
CERCLA
None.

Clean Water Section 307 Priority Pollutants
None.
Safe Drinking Water Act Maximum Contaminant Levels
None.

International Regulations
European Inventory of Existing Commercial Substances (EINECS)

Iprodione	36734-19-7

SECTION 16. OTHER INFORMATION

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 10/05/2005

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

syngenta

MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection Canada, Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3

In Case of Emergency, Call
1-800-327-8633 (FAST MED)

Date of MSDS Preparation (Y/M/D): 2005-06-01

Supersedes date (Y/M/D): 03-09-18

MSDS prepared by:
Department of Regulatory & Biology Development
Syngenta Crop Protection Canada, Inc.

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: **DACONIL® 2787 FLOWABLE FUNGICIDE** Formulation No.: A7867K
Registration Number: 15724 (Pest Control Products Act)
Chemical Class: Chlorinated benzonitrile fungicide.
Synonym: None

Active Ingredient (%): Chlorothalonil (40.4 %) CAS NO.: 1897-45-6
Chemical Name : Tetrachloroisophthalonitrile
Product Use: Fungicide. Please refer to product label for further details.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Amorphous Silica	80 mg/m³/ %SiO2 TWA (total dust)	10 mg/m³ TWA (respirable dust)	Not Established	IARC Group 3	Not Established
Propylene Glycol CAS No. 57-55-6	Not Established	Not Established	50 ppm TWA ****	No	Yes
Chlorothalonil (40.4 %)	Not Established	Not Established	0.1 mg/m³ TWA (possible skin and respiratory sensitizer) ***	IARC Group 2B	Not Established

*** Syngenta Occupational Exposure Limit (OEL)
**** Recommended by AIHA (American Industrial Hygiene Association)
† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications. Syngenta Hazard Category: C, S

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

A severe eye irritant. A mild to moderate skin irritant and skin sensitizer. Causes respiratory tract irritation and possible respiratory sensitization.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Light gray viscous suspension.
Odour: Slight.

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

EYE CONTACT:	Flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.
SKIN CONTACT:	Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation occurs.
INHALATION:	Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is laboured, give oxygen. Obtain immediate medical attention.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Provided the patient is conscious, wash out mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Treat symptomatically.
Persons suffering with temporary allergic skin reactions may respond to treatment with oral antihistamines and topical or oral steroids.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

Asthma or other respiratory conditions may be aggravated by chemical irritants.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: Not applicable.
Upper and lower flammable (explosive) limits in air: Not applicable.
Auto-ignition temperature: Not applicable.
Flammability: Not flammable.
Hazardous combustion products: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.
Conditions under which flammability could occur: Keep fire exposed containers cool by spraying with water.
Extinguishing media: Use water fog or mist, (avoid use of water jet), foam, carbon dioxide, dry powder or halon extinguishant. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.
Sensitivity to explosion by mechanical impact: None known.
Sensitivity to explosion by static discharge: None known.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation.
Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposable container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after working with product, and before eating, handling tobacco, drinking, or using the toilet. Wash contaminated clothing separate from household laundry before re-use. Keep containers closed when not in use. Keep product, wash or rinse water, and contaminated materials out of water, away from crops, and away from access by people, animals and birds.
Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

National Fire Code classification: Not specified.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Personal protective equipment for each exposure route:
General: Avoid breathing vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, or handling tobacco.

INGESTION:	Do not eat, drink, handle tobacco or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.
EYES:	Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
SKIN:	Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
INHALATION:	A respirator is not normally required when handling this substance. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapour cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release,

exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light gray viscous suspension.
Formulation Type: Liquid suspension.
Odour: Slight.
pH: 6-8.
Vapour pressure and reference temperature: 5.7×10^{-7} mmHg @ 25 °C (Chlorothalonil Technical).
Vapour density: Not available.
Boiling point: > 100 °C.
Melting point: Not applicable.
Freezing point: -5 °C.
Specific gravity or density: 1.24 g/mL.
Evaporation Rate: Not available.
Water/oil partition coefficient: Not available.
Odour threshold: Not available.
Viscosity: 1063 cps @ 20 °C.
Solubility in Water: 0.81 mg/L @ 25 °C (Chlorothalonil Technical).

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.
Conditions to avoid: Unstable under highly alkaline conditions.
Incompatibility with other materials: None known.
Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.
Hazardous polymerization: Not known to occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	Slightly Toxic Oral (LD50 Rat):	4,200 mg/kg body weight
Dermal:	Practically Non-Toxic Dermal (LD50 Rat):	> 20,000 mg/kg body weight
Inhalation:	Practically Non-Toxic Inhalation (LC50 Rat):	> 1.96 mg/L air - 4 hours
Eye Contact:	Severely Irritating (Rabbit)	
Skin Contact:	Irritating (Rabbit) - See "Other Toxicity Information", Sec. 11	
Skin Sensitization:	Sensitizer (Guinea Pig) - See "Other Toxicity Information", Sec. 11	

Reproductive/Developmental Effects
Chlorothalonil: No evidence of adverse developmental effects in rabbit and rat studies.

Chronic/Subchronic Toxicity Studies
Chlorothalonil: In dogs, 1 years administration caused a significant decrease in body weight gain and increases in absolute liver and kidney weights.
Neurotoxicity: No evidence in regulatory studies.

Carcinogenicity

Chlorothalonil: No evidence of carcinogenicity in dogs after administration for up to one year. Treatment related increases in the incidence of renal tubular adenoma and carcinoma were observed in rats and male mice. Squamous cell adenomas and carcinomas were also observed in the forestomach of both species. However, the forestomach tumors seen in rodent studies are not relevant to human health as humans do not possess an anatomical equivalent of the rodent forestomach. The relevance of renal tumors to human health is unclear. However, metabolism data suggest that the dog, a species that is resistant to chlorothalonil-induced renal injury, may be more representative of humans than the rat. Subsequently, IARC identifies chlorothalonil as a 2B carcinogen (possibly carcinogenic to humans).

Other Toxicity Information:

Studies on rats and mice have suggested that technical chlorothalonil (97%), when fed at high levels in the diet, may have oncogenic potential to these laboratory animals. However, neither chlorothalonil nor its metabolites interact with DNA and thus are not mutagenic. Tumor formation has been related to a non-genotoxic mechanism of action for which threshold levels have been established in rats and mice. Comprehensive dietary and worker exposure studies have shown exposure levels for humans to be well below these threshold levels. In addition, surveillance of chlorothalonil plant workers for over twenty years has not demonstrated any increase in oncogenic potential to humans.

May cause sensitization by skin contact. Exposure of the skin to chlorothalonil may result in weak contact dermatitis.

Toxicity of Other Components

Test results reported in Section 11 for the finished product take into account any acute hazards related to the excipient ingredients in the formulation.

Amorphous Silica

Amorphous Silica is listed as an IARC (Group 3) carcinogen not classifiable as a human carcinogen (No Data Available) with limited animal evidence. Prolonged exposure to amorphous silica may cause damage to respiratory system and irritation to skin and eyes.

Propylene Glycol

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also, eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredient	
Chlorothalonil:	Lung, eye, kidney.
Inert Ingredients	
Amorphous Silica	Respiratory tract, skin, eye.
Propylene Glycol	CNS, skin, eye, kidney, liver.

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

DACONIL is a fungicide that is mixed with water and applied as a spray for control of diseases on golf course tees, greens and fairways, ornamental turf grass and ornamental herbs, shrubs and trees. The active ingredient, chlorothalonil, is practically nontoxic to birds and insects (bees), but is very highly toxic to fish and invertebrates (water flea).

Eco-Acute Toxicity

Chlorothalonil:

Bees LC_{50}/EC_{50}	> 181 µg/bee
Invertebrates (Water Flea) LC_{50}/EC_{50}	> 0.070 ppm
Fish (Trout) LC_{50}/EC_{50}	0.047 ppm
Fish (Bluegill) LC_{50}/EC_{50}	0.060 ppm
Birds (8-day dietary - Bobwhite Quail) LC_{50}/EC_{50}	> 5,200 ppm
Birds (8-day dietary - Mallard Duck) LC_{50}/EC_{50}	> 5,200 ppm

Eco-Chronic Toxicity

Chlorothalonil:

Invertebrates: *Daphnia* (Water Flea)	
21-Day reproduction MATC	0.05 mg./L
Fish: Fathead minnow: 21 Day MATC	0.003-0.0065 mg/L

Environmental Fate

The active ingredient, chlorothalonil has a low bioaccumulation potential, and low mobility in soil but is not persistent in soil or water. The dissipation half-life in soil is 10-60 days and in water it is < 8 days. The main route of degradation is by microbial degradation and formation of bound residues.
For DACONIL, the bulk material sinks in water (after 24 h).

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL
Not Regulated

IATA CLASSIFICATION - AIR
Not Regulated.

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.
This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 15724

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Crop Protection Canada, Inc.
1-87-SYNGENTA (1-877-964-3682)

Syngenta Crop Protection Canada, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date thereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates to the specific product designated and may no be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of Syngenta Crop Protection Canada, Inc., Syngenta Crop Protection Canada, Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

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MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection Canada, Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3

In Case of Emergency, Call
1-800-327-8633 (FAST MED)

Date of MSDS Preparation (Y/M/D): 2004-06-01

Supersedes date (Y/M/D): 03/09/18

MSDS prepared by:
Department of Regulatory & Biology Development
Syngenta Crop Protection Canada, Inc.

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: **BANNER® MAXX** Formulation No.: A6780D
Registration Number: 27003 (Pest Control Products Act)
Chemical Class: Triazole Derivative Fungicide
Synonym: None

Active Ingredient(%): Propiconazole (14.3%) CAS No.: 60207-90-1
Chemical Name: 1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]methyl]-1H-1,2,4-triazole

Product Use: Fungicide for the control of systemic diseases of golf course turf and ornamentals. For further details please refer to product label.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Tetrahydrofurfuryl Alcohol (THFA) CAS No. 97-99-4	Not Established	Not Established	2 ppm (TWA)****	No	Yes
Propiconazole (14.3%)	Not Established	Not Established	10 mg/m³ TWA***	No	Not Established

*** Syngenta Occupational Exposure Limit (OEL)
**** Recommended by AIHA (American Industrial Hygiene Association)
† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: B, S

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May cause eye, skin and respiratory irritation. Exposure to high vapour levels may cause headache, dizziness, numbness, nausea, incoordination, or other central nervous system effects.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Yellow to orange liquid.
Odour: Aromatic solvent.

Unusual Fire, Explosion and Reactivity Hazards

Combustible liquid. Can release vapours that form explosive mixtures at temperatures at or above the flash point. Dense vapours can flow along surfaces to distant ignition sources and flash back.
During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line **[1-800-327-8633 (1-800-FASTMED)]**, for further information.

EYE CONTACT:	Immediately flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.
SKIN CONTACT:	Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation occurs.
INHALATION:	Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is laboured, give oxygen. Obtain immediate medical attention.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Provided the patient is conscious, wash out mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Treat symptomatically. Contact with eyes may require specialised ophthalmologic attention.

CAUTION: Contains petroleum distillate - vomiting may cause aspiration pneumonia. Do not induce emesis. If a large amount has been ingested, lavage stomach carefully to avoid aspiration.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

Persons with preexisting dermatitis, respiratory disorders, or an allergic history should use extra care in handling this product.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: 82.8 °C (Setaflash).
Upper and lower flammable (explosive) limits in air: Not available.
Auto-ignition temperature: Not Available.
Flammability: Combustible liquid.
Hazardous combustion products: Toxic, flammable fumes are released by thermal decomposition in a fire. Thermal decomposition products may include oxides of nitrogen, carbon and chlorine..
Conditions under which flammability could occur: Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back. Keep fire exposed containers cool by spraying with water.
Extinguishing media: Use foam, carbon dioxide, dry powder, halon extinguishant or water fog or mist, (avoid use of water jet). Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings,

area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.
Sensitivity to explosion by mechanical impact: No.
Sensitivity to explosion by static discharge: No.
National Fire Code classification: Class IIIA Combustible Liquid.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation.
Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Keep product, wash or rinse water, and contaminated materials out of water, away from crops, and away from access by people, animals and birds.
Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Personal protective equipment for each exposure route:
General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, or handling tobacco.

INGESTION:	Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.
EYES:	Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
SKIN:	Where contact is likely, wear chemical-resistant gloves (such as nitrile or butyl), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
INHALATION:	A respirator is not normally required when handling this substance. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations

are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow to orange liquid.
Formulation Type: Water-based micro emulsion concentrate.
Odour: Aromatic solvent.
pH: 5 – 8 (10% emulsion in water).
Vapour pressure and reference temperature: 4.2×10^{-7} mmHg @ 25 °C (Propiconazole Technical)
Vapour density: Not available.
Boiling point: 166 °C.
Melting point: Not available.
Freezing point: -34 °C.
Specific gravity or density: 1.09 g/cm^3 @ 20 °C.
Evaporation Rate: Not available.
Water/oil partition coefficient: Log P 3.65 (Propiconazole Technical).
Odour threshold: Not available.
Viscosity: 50 cps @ 21 °C.
Solubility in Water: 0.1 g/L @ 20 °C (Propiconazole Technical).

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.
Conditions to avoid: Keep away from heat, open flames or other ignition sources.
Incompatibility with other materials: Strong oxidizing.
Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.
Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	Slightly Toxic Oral (LD50 Rat):	4,340 mg/kg body weight
Dermal:	Slightly Toxic Dermal (LD50 Rabbit):	> 2,020 mg/kg body weight
Inhalation:	Slightly Toxic Inhalation (LC50 Rat):	> 1.08 mg/L air - 4 hours
Eye Contact:	Moderately Irritating (Rabbit)	
Skin Contact:	Non-Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects
Propiconazole Technical: None observed.

Chronic/Subchronic Toxicity Studies
Propiconazole Technical: None observed.

Carcinogenicity

Propiconazole Technical: Long-term exposure of mice to high dose levels of propiconazole produced an increase in liver tumors in male mice. Propiconazole is not considered to be carcinogenic.

Other Toxicity Information:

None.

Toxicity of Other Components

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the "other components" in the formulation.

Tetrahydrofurfuryl Alcohol (THFA):

Inhalation of vapours at high concentrations can cause central nervous system effects (dizziness, headache), irritation to eyes or respiratory tract. Chronic overexposure may affect the kidney.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredients

Propiconazole Technical: Liver, skin, eye

Inert Ingredients

Tetrahydrofurfuryl Alcohol (THFA): CNS, kidney.

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

BANNER MAXX is a fungicide that is mixed with water and applied as a spray for disease control on turf. The active ingredient, propiconazole, is practically nontoxic to plants birds and insects (bees) but is moderately toxic to aquatic invertebrates (water flea).

Eco-Acute Toxicity

Propiconazole Technical:

Bees LC_{50}/EC_{50}	> 100 µg/bee
Invertebrates (*Daphnia magna*) 48-hour LC_{50}/EC_{50}	3.3 – 10.2 ppm
Fish (Rainbow Trout) 96-hour LC_{50}/EC_{50}	4.3 ppm
Fish (Bluegill) 96-hour LC_{50}/EC_{50}	5.7 – 6.4 ppm
Birds (8-day dietary - Bobwhite Quail) LC_{50}/EC_{50}	> 5,620 ppm
Birds (8-day dietary - Mallard Duck) LC_{50}/EC_{50}	> 5,620 ppm
Bobwhite Oral LC_{50}	2,825 mg/kg
Mallard Oral LC_{50}	> 2,510 mg/kg

Eco-Chronic Toxicity

Propiconazole Technical:

Fish (Fathead minnow) Early Life Stage MATC	0.65 mg/L
Invertebrate (*Daphnia Magna*) Life Cycle MATC	0.46 mg/L
Mallard Reproduction NOEC	300 ppm
Bobwhite Reproduction NOEC	1,000 ppm

Environmental Fate

The active ingredient, propiconazole, has a low bioaccumulation potential, low mobility, and low to moderate persistence in soil and water. The Dissipation half-life in soil is 70 days. The main route of degradation is by microbial degradation and formation of bound residues.

For BANNER MAXX, the bulk material sinks in water (after 24 h).

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL
Not Regulated.

IATA CLASSIFICATION - AIR
Not Regulated.

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 27003

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Crop Protection Canada, Inc.
1-87-SYNGENTA (1-877-964-3682)

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Scotts

MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT IDENTIFICATION

Product Name: KILLEX LIQUID TURF HERBICIDE

Product Use: Weed Killer

WHMIS Class: Pest Control Products Act No. 09811- WHMIS label not required

T.D.G. Classification: Environmentally hazardous substances, liquid, solution, N.O.S. (2,4-D, Dicamba); Class 9.2; UN3082; PGIII

Manufacturer/Supplier: Scotts Canada Ltd.
Address: 2000 Argentia Road, Plaza 5, Suite # 101
Mississauga, Ontario L5N 2R7
Telephone: (905) 814-7425
Fax: (905) 814-7392

Medical Emergencies: 1-800-668-4877
Pet Emergencies: 1-800-345-4735 ext. 123

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS#	Wt%	ACGIH-TLV	LC_{50}	LD_{50}
2,4-D	94-75-7	10-30	10 mg/m³ TWA	Not available	375 mg/kg oral, rat
Mecoprop	93-65-2	10-30	Not available	6.4 mg/L 4 h, rat	650 mg/kg oral, rat
Dicamba	1918-00-9	1-5	Not available	9.6 mg/L 4 h, rat	1040 mg/kg oral, rat

*The oral LD_{50} for the product is > 5000 mg/kg, rat.
*The dermal LD_{50} for the product is > 2000 mg/kg, rat.

SECTION III - PHYSICAL DATA

Boiling Point (deg C): 100
Vapour Pressure (mm Hg): Not available
Vapour Density (Air = 1): > 1
Solubility in Water: Complete
Physical State: Liquid
Appearance and Odour: Clear brown, strong fishy
Specific Gravity (H_2O = 1, @20°C): 1.108-1.134
% Volatile (Wt %, 2 h @ 105°C): 47
Evaporation Rate (H_2O = 1): Not available
pH (as supplied): 8.0-10.0
Viscosity: Not available
Odour Threshold (ppm): Not available

SECTION IV - FIRE AND EXPLOSION DATA

Flammability: Not flammable by WHMIS criteria.
Flash Point (deg C, TCC): None **LEL:** Not applicable **UEL:** Not applicable
Hazardous Combustion Products: May include and are not limited to oxides of carbon, oxides of nitrogen, hydrogen chloride.
Autoignition Temperature (deg C): Not applicable.
Means of Extinction: Dry chemical, water spray, chemical foam, carbon dioxide, fog.
Special Fire Hazards: Fire fighters should wear self-contained breathing apparatus.

SECTION V - REACTIVITY DATA

Conditions for Chemical Instability: Stable.
Incompatible Materials: Acids, caustics, oxidizers.
Reactivity, and Under What Conditions: Not available.
Hazardous Decomposition Products: May include and are not limited to oxides of carbon, oxides of nitrogen, hydrogen chloride when heated to decomposition.

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry: Eye, Skin contact, Inhalation, Ingestion

EFFECTS OF ACUTE EXPOSURE:
Eye: May cause severe irritation. May cause permanent eye damage.
Skin: May cause moderate irritation. May cause skin sensitization in sensitive individuals.
Inhalation: May cause respiratory tract irritation.
Ingestion: Harmful if swallowed. May cause stomach distress, nausea, vomiting.

EFFECTS OF CHRONIC EXPOSURE:
Skin: Prolonged or repeated exposure can cause drying, defatting and dermatitis.
Irritancy: Hazardous by WHMIS criteria.
Respiratory Tract Sensitization: No data available.
Carcinogenicity: Non-hazardous by WHMIS criteria.
Teratogenicity, Mutagenicity, Reproductive Effects: No data available.
Synergistic Materials: Not available.

SECTION VII- PREVENTATIVE MEASURES

Note: When used as intended, direct contact with the product is unlikely. The following protection is recommended for potential contact with the product.
Gloves: Rubber gloves. Confirm with a reputable supplier.
Eye Protection: Chemical splash goggles.
Respiratory Protection: Not normally required if good ventilation is maintained.
Other Protective Equipment: As required by employer code.
Engineering Controls: General ventilation normally adequate.
Leak and Spill Procedure: Before attempting cleanup, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice.
Waste Disposal: Review federal, provincial and local government requirements prior to disposal.
Storage and Handling Requirements: Keep out of the reach of children. Store in a closed container away from incompatible materials. Avoid contamination of food or food contact surfaces when using this product. Keep from freezing.

SECTION VIII - FIRST AID

Eye: Flush with water. Remove contact lenses, if applicable, and continue rinsing for 15 minutes. Obtain medical attention if irritation persists.
Skin: Flush with water. Wash with soap and water. Obtain medical attention if irritation persists. Wash contaminated clothing before reuse.
Inhalation: Move victim to fresh air. If symptoms persist, obtain medical attention.
Ingestion: Do not induce vomiting. Rinse mouth with water, then drink one glass of water. Obtain medical attention immediately. Never give anything by mouth if victim is unconscious, is rapidly losing consciousness or is convulsing.

SECTION IX - PREPARATION INFORMATION

Date: September 1, 1999 **MSDS Prepared By:** Dell Tech Laboratories Ltd. **Telephone:** (519) 858-5021