



REPORT

Phase II Environmental Site Assessment

590 Sixth Street, Collingwood, Ontario

Submitted to:

Ed McGriskin

2579283 Ontario Inc.
103-1725 16th Avenue
Richmond Hill, ON
L4B 0B3

Submitted by:

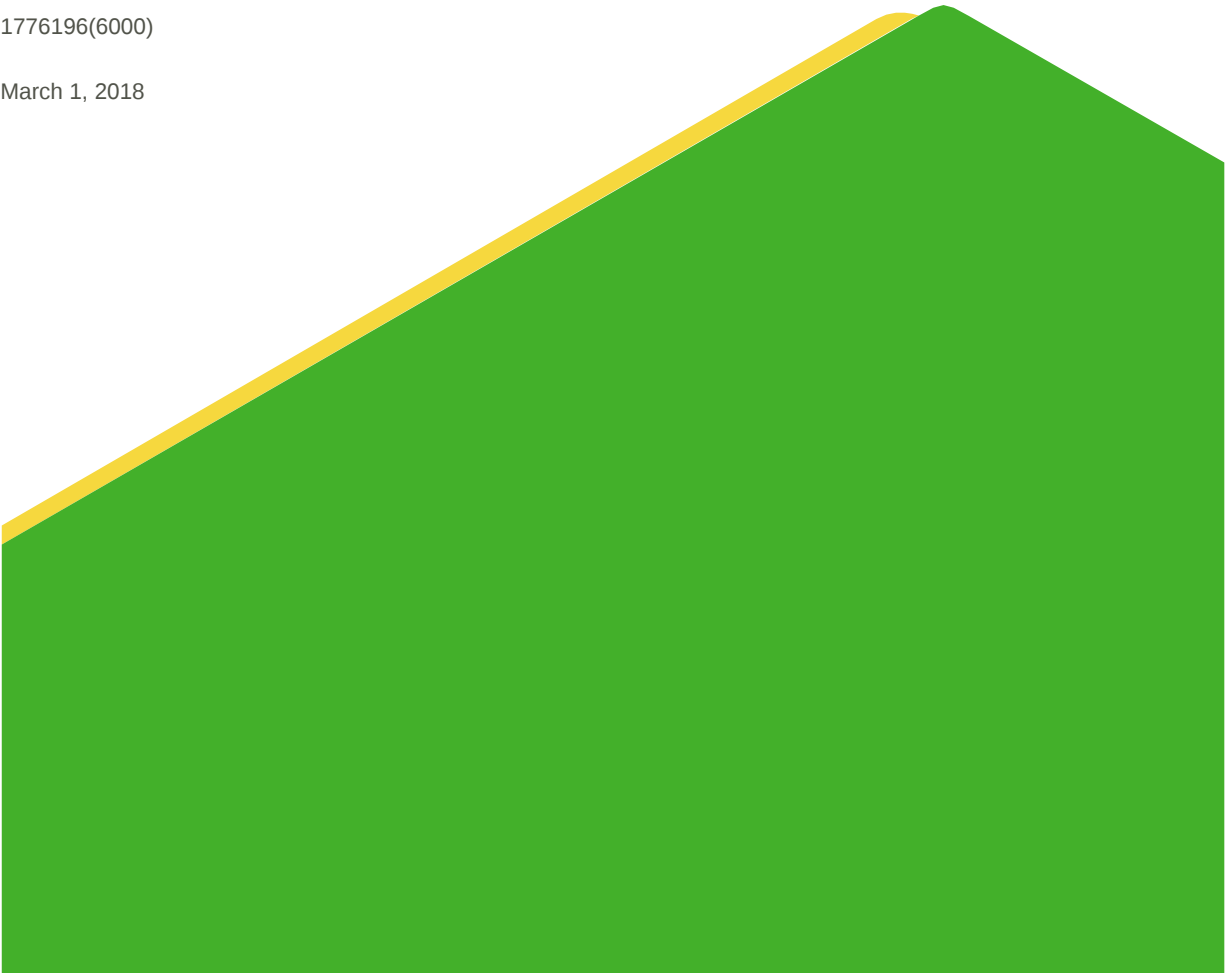
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1776196(6000)

March 1, 2018



Distribution List

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Executive Summary

Golder Associates Ltd. ("Golder") was retained by 2579283 Ontario Inc. to conduct a Phase II Environmental Site Assessment ("Phase II ESA") of the property located at 590 6th Street, Collingwood, Ontario (the "Site"). The Site location and plan are provided in Figure 1.

The Site is currently owned by Bill Brown, who has owned the property since the 2001. The Site is developed with a residential dwelling, a garage, a sea can storage container, and a metal trailer.

The objective of the Phase II ESA was to investigate one or more specific issues of potential environmental concern to assess whether contaminants of potential concern are present in soil at concentrations that exceed the applicable soil standards. Golder understands that this assessment is required for due diligence purposes and that there is no intention to file a Record of Site Condition ("RSC") under O.Reg. 153/04.

The Phase II ESA was conducted in general accordance with Canadian Standards Association ("CSA") Standard Z769-00, *Phase II Environmental Site Assessment* (reaffirmed 2013) for the purpose of identifying contaminants of potential concern that may be present at concentrations exceeding applicable soil standards.

Authorization to proceed with this investigation was received by email from Mr. Paul Husson of Husson Engineering and Management on January 10, 2018. This Phase II ESA report has been prepared for the use of 2579283 Ontario Inc. and may not be relied upon by others without prior written consent from Golder.

A Phase I Environmental Site Assessment ("Phase I ESA") report was prepared by Golder for 2579283 Ontario Inc., dated December 2017. Based on the findings of the Phase I ESA, 2579283 Ontario Inc. requested that Golder further assess the following issues of potential environmental concern:

- 1) A 910 L aboveground storage tank (AST) was observed on the eastern wall in the northeast corner of the garage. The AST was installed in 2001 and has reportedly been refilled two or three times during the winter season by Collingwood Fuels. The AST was observed to be placed on top of two concrete pads. The concrete pads were intact, and no spills or staining were observed. The AST had no secondary containment;
- 2) Fill consisting of sediment from the reconstruction of Black Ash Creek was placed on the Site to a depth of approximately 1.2 m from existing grades; and,
- 3) A former orchard present on the Site from at least 1973 to 1989.

In order to assess the above issues of potential environmental concern, a Phase II ESA was conducted at the Site, which included the excavation of three test pits. In general, the subsurface soil conditions encountered in the test pits consisted of a layer of topsoil overlying fill material, underlain by native silt to silty clay. The fill material encountered in the test pits generally consisted of silty clay to sand and silt which extended to depths of up to 1.9 mbgs. Topsoil extended to a depth of 1.2 mbgs at TP18-2. The fill was reportedly placed at the Site during the excavation and reconstruction of the adjacent creek. Buried topsoil was noted at TP18-1 at a depth of 0.96 mbgs and at 1.8 mbgs at TP18-3.

The soil analytical results were compared to the coarse textured soil site condition standards for residential land use and potable groundwater use that are listed in Table 8 of the Ontario Ministry of the Environment and Climate Change ("MOECC") *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, April 2011 (the "Table 8 standards").

The analyte dichlorodiphenyldichloroethylene ("DDE") was detected in one soil sample at concentrations exceeding its respective reportable detection limit. DDE is a breakdown product of dichlorodiphenyltrichloroethane ("DDT"), a common pesticide used in the agricultural industry during the mid-twentieth century.

The following provides a summary of the environmental conditions at the Site locations corresponding to the issues of potential environmental concern investigated during this Phase II ESA:

- Issue 1 (Heating Oil AST) – The reported concentrations for the contaminants of potential concern in the environmental samples collected from this location were below the Table 8 standard;
- Issue 2 (Fill of unknown quality) – The reported concentrations for the contaminants of potential concern in the environmental samples intended to investigate this issue were below the Table 8 standard; and,
- Issue 3 (Former orchard) - The reported concentrations for the contaminants of potential concern in the environmental samples collected from this location were below the applicable Table 8 standard, except TP18-1-3 (1.20 to 1.35 mbgs), which had a reported DDE concentration (0.31 µg/g) above the standard of 0.05 µg/g.

Further delineation of the DDE impact is required to determine the volume of impacted soil. Since the material is buried beneath the existing fill layer it would be reasonable to complete this work at the time of site grading or pre-loading of the site under the supervision of Golder.

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1.0 INTRODUCTION

Golder Associates Ltd. ("Golder") was retained by 2579283 Ontario Inc. to conduct a Phase II Environmental Site Assessment ("Phase II ESA") of the property located at 590 6th Street, Collingwood, Ontario (the "Site"). The Site location and plan are provided in Figure 1.

The Site is currently owned by Bill Brown, who has owned the property since the 2001. The Site is developed with a residential dwelling, a garage, a sea can storage container, and a metal trailer.

The objective of the Phase II ESA was to investigate one or more specific issues of potential environmental concern to assess whether contaminants of potential concern are present in soil at concentrations that exceed the applicable soil standards. Golder understands that this assessment is required for due diligence purposes and that there is no intention to file a Record of Site Condition ("RSC") under O.Reg. 153/04.

The Phase II ESA was conducted in general accordance with Canadian Standards Association ("CSA") Standard Z769-00, *Phase II Environmental Site Assessment* (reaffirmed 2013) for the purpose of identifying contaminants of potential concern that may be present at concentrations exceeding applicable soil standards.

Authorization to proceed with this investigation was received by email from Mr. Paul Husson of Husson Engineering and Management on January 10, 2018. This Phase II ESA report has been prepared for the use of 2579283 Ontario Inc. and may not be relied upon by others without prior written consent from Golder.

1.1 Background

A Phase I Environmental Site Assessment ("Phase I ESA") report was prepared by Golder for 2579283 Ontario Inc., dated December 2017. Based on the findings of the Phase I ESA, 2579283 Ontario Inc. requested that Golder further assess the following issues of potential environmental concern:

- 4) A 910 L aboveground storage tank (AST) was observed on the eastern wall in the northeast corner of the garage. The AST was installed in 2001 and has reportedly been refilled two or three times during the winter season by Collingwood Fuels. The AST was observed to be placed on top of two concrete pads. The concrete pads were intact, and no spills or staining were observed. The AST had no secondary containment;
- 5) Fill consisting of sediment from the reconstruction of Black Ash Creek was placed on the Site to a depth of approximately 1.2 m from existing grades; and,
- 6) A former orchard present on the Site from at least 1973 to 1989.

1.2 Scope of Work

To achieve the objectives of the Phase II ESA, the scope of work included:

- The excavation of three test pits and the collection of soil samples to investigate soil quality at the Site;
- The submission of soil samples for laboratory analysis of specific contaminants of potential concern; and,
- Preparing a report summarizing the work conducted at the Site and presenting the findings of the investigation.

The rationale for the investigation locations and the contaminants of potential concern are presented in Table 1. Test pit locations are presented in Figure 2.

Table 1: Investigation Rationale and Contaminants of Potential Concern

Issue of Potential Environmental Concern	Sample Location	Rationale	Summary of Analyses	
			Soil	Groundwater
AST - eastern wall in the northeast corner of the garage	TP18-1	Investigate shallow soil quality in the soil adjacent to the AST on the east side of the garage	BTEX, PHC F1-F4	None
Fill across Site	TP18-1 to TP18-3	Investigate shallow soil quality in the fill	VOC, PHC F1-F4, PAH, Metals, Inorganics	None
Former orchard	TP18-1 to TP18-3	Investigate shallow soil quality in the native soil in the vicinity of the former orchard	OC Pesticides, PCBs, Metals, Inorganics	None

Notes

AST above ground storage tank
 PHC F1 to F4 petroleum hydrocarbon fractions F1 to F4
 BTEX benzene, toluene, ethylbenzene, and xylenes
 PAH = polycyclic aromatic hydrocarbons
 OC Pesticides = organochlorine pesticides
 VOC = volatile organic compounds

2.0 INVESTIGATION METHODOLOGY

The following sections describe the field investigation methodology employed for the Phase II ESA. The fieldwork was carried out on January 25, 2018. Prior to drilling, Golder arranged for the completion of public utility clearances. Golder retained Morris Shelswell & Sons Excavating and Grading Ltd. ("Shelswell") of Hawkestone, Ontario, for test pit excavation. Field activities were carried out by or under the supervision of Golder. The test pit locations are presented on Figure 2.

The field activities were carried out in general accordance with CSA Standard Z769-00.

2.1 Test Pit Excavation

Test pit excavation was completed on January 25, 2018 by Shelswell using a Kobelco track mounted excavator. Three test pits were advanced within the overburden to depths ranging from 2.7 m below ground surface ("mbgs") to 3.1 mbgs. The test pit locations are presented on Figure 2.

At each test pit location, soil samples were collected, using the bucket of the excavator, for field screening (including visual inspection and field measurement of headspace concentration), soil sample collection and stratigraphic logging by a Golder field supervisor. A portion of each soil sample was placed in a sealed plastic bag, as well as a pre-cleaned laboratory-supplied sample container for potential laboratory analysis. Soil headspace concentrations of bagged samples were measured using a photoionization detector ("PID") and a combustible gas detector, calibrated using isobutylene and hexane, respectively, to determine total organic vapour and combustible gas concentrations. Headspace readings were taken after sample collection.

Soil samples were stored on ice in a cooler until delivery to AGAT Laboratories ("AGAT") for analysis. Selection of soil samples for laboratory analysis was based on the results of headspace screening and conditions encountered in each test pit, including visual observations of potential impact (if any) and soil type. A summary of soil samples submitted for laboratory analysis is provided in Table 2.

Table 2: Summary of Soil Samples Submitted for Laboratory Analysis

Issue	Sample Locations	Sample ID	Sample Depth (mbgs)	Soil Sample Description	Headspace Reading	
					PID (ppm)	Gastech (ppm)
1, 2	TP18-1	TP18-1-2	0.80-0.95	FILL - (SP/ML) SAND and SILT, trace clay	0	0
3		TP18-1-3	1.20-1.35	FILL - TOPSOIL	0	0
2	TP18-2	TP18-2-2	1.00-1.25	TOPSOIL	0	0
		DUP1				
3		TP18-2-3	1.70-1.85	(CL) SILTY CLAY, trace to some sand	0	0
2	TP18-3	TP18-3-3	1.50-1.65	FILL - (SM/GP) Sandy SILT and GRAVEL, trace clay	0	1
3		TP18-3-5	2.40-2.55	(CL) SILTY CLAY, some sand	0	0
		DUP2				

Notes

PID photoionization detector

ppm parts per million by volume

2.2 Investigation-Derived Wastes

Soil generated from the test pit excavation was placed back inside the test pits and nominally compacted using the bucket of the excavator.

2.3 Quality Assurance Program

Golder's quality assurance program for environmental investigations was implemented to ensure that analytical data obtained by the investigation were valid and representative. The quality assurance program included the following measures:

- The use of standard operating procedures for all field investigation activities;
- The collection of field duplicate samples at a minimum frequency of one duplicate for every ten samples;
- Initial calibration of field equipment was performed at the start of each field day, with a daily check of calibration using a standard of known concentration;
- Soil samples were handled and stored in accordance with the sample collection and preservation requirement of the Ministry of the Environment ("MOE") *Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.1 of the Environmental Protection Act*, July 1, 2011. Samples were collected directly into pre-cleaned laboratory-supplied sample containers with the appropriate preservative for the analyte group. Upon collection, samples were placed in insulated coolers with ice for storage and transport to the analytical laboratory;
- Clean disposable Nitrile™ gloves were used at each sampling location to prevent cross-contamination;

- Field records documenting the methods and circumstances of collection for each field sample were prepared at the time of sample collection. Each sample was assigned a unique sample identification number recorded in the field notes, along with the date and time of sample collection, the sample matrix, and the requested analyses; and,
- The submission of samples to the analytical laboratory in accordance with standard chain of custody procedures.

Laboratory analyses were completed by an analytical laboratory accredited in accordance with the International Standard ISO/IEC 17025 *General Requirement for the Competence of Testing and Calibration Laboratories*, dated May 5, 2005 (as amended), and accredited in accordance with the applicable standards for proficiency testing developed by the Standards Council of Canada or the Canadian Association for Laboratory Accreditation.

3.0 SUBSURFACE CONDITIONS

3.1 Site Geology

Details of the subsurface conditions encountered during the drilling program are presented on the Record of Test Pit sheets provided in Appendix A. Subsurface conditions encountered will vary between and beyond borehole sampling locations.

In general, the subsurface soil conditions encountered in the test pits consisted of a layer of topsoil overlying fill material, underlain by native silt to silty clay. The fill material encountered in the test pits generally consisted of silty clay to sand and silt which extended to depths of up to 1.9 mbgs. Topsoil extended to a depth of 1.2 mbgs at TP18-2. The fill was reportedly placed at the Site during the excavation and reconstruction of the adjacent creek. Buried topsoil was noted at TP18-1 at a depth of 0.96 mbgs and at 1.8 mbgs at TP18-3.

Headspace readings obtained as part of the test pit excavation program were non-detect for the hexane sensor (Gastech) and ranged from 0 ppm to 1 ppm for the isobutylene sensor ("PID"). No obvious visual or olfactory evidence of environmental impact was noted during the test pit excavation program.

3.2 Regulatory Criteria

The selection of the relevant site conditions standards was based upon the following considerations:

- The Site is not an environmentally sensitive site as defined by section 41 of O.Reg. 153/04;
- The nearest permanent water body is less than 30 metres from the Site;
- The depth to groundwater is less than 3 mbgs and the depth of overburden soil is greater than 2 mbgs;
- Based on the available historical reports, groundwater is assumed to be a potable resource;
- The intended land use of the Site is residential; and,
- Based on visual observation, at least 1/3 of the soil at the Site is considered "coarse textured".

Accordingly, the soil analytical results were compared to the coarse textured soil site condition standards for residential land use and potable groundwater use that are listed in Table 8 of the Ontario Ministry of the Environment and Climate Change ("MOECC") *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, April 2011 (the "Table 8 standards").

3.3 Soil Analytical Results

The laboratory certificates of analysis are provided in Attachment B. The analyte dichlorodiphenyldichloroethylene (“DDE”) was detected in one soil sample at concentrations exceeding its respective reportable detection limit. DDE is a breakdown product of dichlorodiphenyltrichloroethane (“DDT”), a common pesticide used in the agricultural industry during the mid-twentieth century.

The reported concentrations of all soil samples were below the Table 8 standards with the exception of the following:

- TP18-1-3 – The reported concentration of DDE in soil sample BH18-1-3 (0.31 µg/g) was above the Table 8 standard (0.05 µg/g).

3.4 Data Quality Review

Golder’s data quality review included the analytical results of field and laboratory quality assurance samples. The reported concentrations for the relative percent difference for the duplicate sample sets are within acceptable control limits, except for cobalt in TP18-3-5 (4.7 µg/g) and its duplicate, DUP2 (6.2 µg/g), which exhibited an elevated RPD of 38%. This is likely the result of sample heterogeneity. As both results are well below the MOECC Table 8 Standard of 22 µg/g, this elevated RPD does not significantly alter the findings of this report. The analytical results for the laboratory quality assurance samples indicate that the results of the internal quality control program were within the laboratory’s specified control limits.

Accordingly, the analytical data generated during the investigation are valid and representative and may be used in this Phase II ESA without further qualification other than as described in this report.

4.0 SUMMARY OF ENVIRONMENTAL CONDITIONS

The following provides a summary of the environmental conditions at the Site locations corresponding to the issues of potential environmental concern investigated during this Phase II ESA:

- Issue 1 (Heating Oil AST) – The reported concentrations for the contaminants of potential concern in the environmental samples collected from this location were below the Table 8 standard;
- Issue 2 (Fill of unknown quality) – The reported concentrations for the contaminants of potential concern in the environmental samples intended to investigate this issue were below the Table 8 standard; and,
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5.0 RECOMMENDATIONS

Further delineation of the DDE impact is required to determine the volume of impacted soil. Since the material is buried beneath the existing fill layer it would be reasonable to complete this work at the time of site grading or pre-loading of the site under the supervision of Golder.

6.0 LIMITATIONS

The activities described and conclusions drawn within this report address only the geo-environmental (chemical) aspects of the subsurface conditions at the subject property. The geotechnical (physical) aspects, including, without limitation, the engineering recommendations for the design and construction of building foundations, pavements, underground servicing and the like are outside the terms of reference for this report and have not been investigated or addressed herein.

This report was prepared for the exclusive use of 2579283 Ontario Inc. No third parties may rely upon this report. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third party. This report is based on data and information collected during this Phase II environmental site assessment conducted by Golder Associates Ltd. in accordance with our proposal and is based solely on site conditions encountered at the time of the field investigation. In preparing this site assessment, Golder evaluated only conditions on the Site and did not evaluate the operations on adjacent properties. Only limited chemical analyses of soil and groundwater samples were carried out. Regulatory criteria are used for comparison purposes only and are not necessarily enforceable on the Site owner. It should be noted that the results of an investigation of this nature should, in no way, be construed as a warranty that the site is free from any and all contamination from past or current practices.

In evaluating the property, Golder Associates Ltd. has relied in good faith on information provided by others. We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omission, errors, misinterpretations or fraudulent acts of the persons interviewed. Golder Associates Ltd. accepts no responsibility for any reduction in property value, either real or perceived, or for decisions made as a result of the reporting of factual information herein.

If additional information is obtained during future work at the Site, including excavations, borings, or other studies, and/or if conditions exposed during construction are different from those encountered in this assessment, Golder should be requested to re-evaluate the conclusions presented in this report and provide amendments as required.

It is our understanding that the work associated with this Phase II ESA was not intended to support the submission of a Record of Site Condition ("RSC"). If a RSC is required, additional field work and reporting may be necessary.

7.0 CLOSING

We trust that this report meets your immediate requirements. If you have any questions regarding this report, please do not hesitate to contact this office.

Signature Page

Golder Associates Ltd.



Christi Groves, B.Sc.(Hons)
Senior Environmental Scientist



Steven Desrocher, M.Sc., P.Geo.
Associate, Senior Contaminant Hydrogeologist

CLG/SD/plc

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APPENDIX A

Record of Test Pit Sheets

1776196

590 6TH STREET, COLLINGWOOD, ONTARIO



TP18-1			Elevation: masl	Excavated 25/01/18	Samples		Logged by DEH	
Depth (mbgs)		Description of Materials	Remarks	#	Depth (mbgs)	HEX (ppm)	IBL (ppm)	
0.00	0.18	TOPSOIL, dark brown, moist, rootlets, frozen		1	0.30	0	0	
0.18	0.40	FILL - (CL) SILTY CLAY, trace sand, some gravel; moist						
0.40	0.96	FILL - (SP/ML) SAND and SILT, trace clay; moist	Sample submitted TP18-1-2	2	0.80	0	0	
0.96	1.30	FILL - TOPSOIL, wet; dark brown	Sample submitted TP18-1-3	3	1.20	0	0	
1.30	2.70	(ML) SILT, some sand, compact; light brown to grey; wet		4	1.60	0	0	
				5	2.20	0	0	
2.70	3.00	(ML) SILT, some sand, grey; wet		6	2.70	0	0	
				7	3.00	0	0	
3.00		End of Test Pit						
TP18-2			Elevation: masl	Excavated 25/01/18	Samples		Logged by DEH	
Depth (mbgs)		Description of Materials	Remarks	#	Depth (mbgs)	HEX (ppm)	IBL (ppm)	
0	1.20	TOPSOIL, dark brown, moist, rootlets		1	0.50	0	0	
			Sample submitted TP17-2-2	2	1.00	0	0	
1.20	2.00	(CL) SILTY CLAY, trace to some sand, light brown; moist	Sample submitted TP17-2-3	3	1.70	0	0	
2.00	2.70	(ML) Clayey SILT; grey; wet		4	2.00	0	1	
				5	2.70	0	1	
2.70		End of Test Pit						

TEST PIT LOGS

1776196

PHASE TWO ENVIROMENTAL SITE ASSESSMENT

590 6TH STREET, COLLINGWOOD, ONTARIO



TP17-3			Elevation: masl	Excavated 25/01/18	Samples		Logged by DEH	
Depth (mbgs)	Description of Materials		Remarks		#	Depth (mbgs)	HEX (ppm)	IBL (ppm)
0	0.15	TOPSOIL, dark brown, moist, rootlets						
0.15	1.50	FILL - (CL) SILTY CLAY, light brown, some grey; w=PL			1	0.50	0	0
					2	1.00	0	0
1.50	1.90	FILL - (SM/GP) Sandy SILT and GRAVEL, trace clay; brown; moist to wet. Topsoil layer noted between 1.8 and 1.9 mbgs		Sample submitted TP17-3-3	3	1.50	0	1
1.90	2.40	(SM) Sandy SILT, trace clay; brown; moist to wet			4	1.90	0	0
				Sample submitted TP17-3-5	5	2.40	0	0
2.40	3.10	(CL) SILTY CLAY, some sand, light to medium brown; compact, w=PL						
3.10		End of Test Pit		Test Pit Dry	6	3.10	0	0

APPENDIX B

Certificates of Analysis

**CLIENT NAME: GOLDER ASSOCIATES LTD.
121 COMMERCE PARK DRIVE, UNIT L
BARRIE, ON L4N8X1
(705) 722-4492**

ATTENTION TO: Christi Groves

PROJECT: 1776196 (6000)

AGAT WORK ORDER: 18T305926

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

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

DATE REPORTED: Feb 02, 2018

PAGES (INCLUDING COVER): 17

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.

AGAT Laboratories (V1)

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

*Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request*



Certificate of Analysis

AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2018-01-26

DATE REPORTED: 2018-02-02

Parameter	Unit	SAMPLE DESCRIPTION:		TP18-1-2	TP18-1-3	TP18-2-2	TP18-2-3	TP18-3-3	TP18-3-5	DUP1	DUP2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-01-25	2018-01-25	2018-01-25	2018-01-25	2018-01-25	2018-01-25	2018-01-25	2018-01-25
		G / S	RDL	9032258	9032260	9032261	9032277	9032279	9032280	9032284	9032287
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	6	7	4	4	2	7	3
Barium	µg/g	220	2	17	35	47	30	32	18	49	23
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	0.6	<0.5
Boron	µg/g	36	5	7	8	11	11	10	9	11	9
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.10	0.42	0.62	0.25	0.30	0.11	0.57	0.16
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	2	9	14	17	14	13	10	19	12
Cobalt	µg/g	22	0.5	4.4	5.8	6.7	7.2	7.2	4.7	7.4	6.9
Copper	µg/g	92	1	16	23	34	18	16	13	36	17
Lead	µg/g	120	1	4	12	13	6	6	5	12	5
Molybdenum	µg/g	2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	82	1	9	12	16	16	15	9	17	12
Selenium	µg/g	1.5	0.4	<0.4	0.8	0.9	<0.4	<0.4	0.7	0.8	<0.4
Silver	µg/g	0.5	0.2	<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	<0.4
Uranium	µg/g	2.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5
Vanadium	µg/g	86	1	12	17	22	18	16	13	23	16
Zinc	µg/g	290	5	19	58	64	32	31	20	64	25
Chromium VI	µg/g	0.66	0.2	<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	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.7	0.005	0.107	0.203	0.185	0.187	0.289	0.358	0.197	0.396
Sodium Adsorption Ratio	NA	5	NA	0.104	0.058	0.033	0.097	0.031	0.103	0.031	0.116
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.99	7.52	7.55	6.82	7.45	7.73	7.49	7.79

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9032258-9032287 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:

Divine Basily



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

5835 COOPERS AVENUE
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CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2018-01-26

DATE REPORTED: 2018-02-02

		SAMPLE DESCRIPTION:		TP18-1-3	TP18-2-3	TP18-3-5	DUP2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-01-25	2018-01-25	2018-01-25	2018-01-25
Parameter	Unit	G / S	RDL	9032260	9032277	9032280	9032287
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.05	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
Heptachlor Epoxide	µg/g	0.05	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
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007
DDD	µg/g	0.05	0.007	0.012	<0.007	<0.007	<0.007
DDE	µg/g	0.05	0.007	0.31	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	0.12	<0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	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
Methoxychlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.02	0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1242	µg/g		0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1248	µg/g		0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1254	µg/g		0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1260	µg/g		0.10	<0.10	<0.10	<0.10	<0.10
Polychlorinated Biphenyls	µg/g	0.3	0.10	<0.10	<0.10	<0.10	<0.10
Moisture Content	%		0.1	22.4	18.6	16.7	17.8
Surrogate	Unit	Acceptable Limits					
TCMX	%	50-140		98	88	78	102
Decachlorobiphenyl	%	60-140		94	102	86	100

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CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2018-01-26

DATE REPORTED: 2018-02-02

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9032260-9032287 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.

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AGAT WORK ORDER: 18T305926

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CLIENT NAME: GOLDER ASSOCIATES LTD.

SAMPLING SITE:

ATTENTION TO: Christi Groves

SAMPLED BY:

O. Reg. 153(511) - PAHs (Soil)							
DATE RECEIVED: 2018-01-26				DATE REPORTED: 2018-02-02			
Parameter	Unit	SAMPLE DESCRIPTION:		TP18-1-2	TP18-2-2	TP18-3-3	DUP1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-01-25	2018-01-25	2018-01-25	2018-01-25
		G / S	RDL	9032258	9032261	9032279	9032284
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.19	0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.22	0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits					
Chrysene-d12	%	50-140		111	90	112	83

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9032258-9032284 Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

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AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

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CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2018-01-26

DATE REPORTED: 2018-02-02

		SAMPLE DESCRIPTION:		TP18-1-2	TP18-2-2	TP18-3-3	DUP1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-01-25	2018-01-25	2018-01-25	2018-01-25
Parameter	Unit	G / S	RDL	9032258	9032261	9032279	9032284
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA
Moisture Content	%		0.1	17.0	21.7	20.0	23.5
Surrogate	Unit	Acceptable Limits					
Terphenyl	%	60-140		86	99	88	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9032258-9032284 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.
The chromatogram has returned to baseline by the retention time of nC50.
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.

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PROJECT: 1776196 (6000)

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CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2018-01-26

DATE REPORTED: 2018-02-02

		SAMPLE DESCRIPTION:		TP18-1-2	TP18-2-2	TP18-3-3	DUP1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-01-25	2018-01-25	2018-01-25	2018-01-25
Parameter	Unit	G / S	RDL	9032258	9032261	9032279	9032284
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.02	<0.02	<0.02	<0.02	<0.02
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05

Certified By:



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AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

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CLIENT NAME: GOLDER ASSOCIATES LTD.

SAMPLING SITE:

ATTENTION TO: Christi Groves

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)							
DATE RECEIVED: 2018-01-26				DATE REPORTED: 2018-02-02			
Parameter	Unit	SAMPLE DESCRIPTION:		TP18-1-2	TP18-2-2	TP18-3-3	DUP1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-01-25	2018-01-25	2018-01-25	2018-01-25
		G / S	RDL	9032258	9032261	9032279	9032284
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<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	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	50-140		89	92	88	86
4-Bromofluorobenzene	% Recovery	50-140		90	90	83	82

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9032258-9032284 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:



AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

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CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9032260	TP18-1-3	ON T8 S RPI/ICC	O. Reg. 153(511) - OC Pesticides + PCBs (Soil)	DDE	µg/g	0.05	0.31

Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

PROJECT: 1776196 (6000)

SAMPLING SITE:

AGAT WORK ORDER: 18T305926

ATTENTION TO: Christi Groves

SAMPLED BY:

Soil Analysis															
RPT Date: Feb 02, 2018			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	9032258	9032258	<0.8	<0.8	NA	< 0.8	102%	70%	130%	103%	80%	120%	91%	70%	130%
Arsenic	9032258	9032258	2	2	NA	< 1	113%	70%	130%	104%	80%	120%	103%	70%	130%
Barium	9032258	9032258	17	17	2.3%	< 2	101%	70%	130%	92%	80%	120%	96%	70%	130%
Beryllium	9032258	9032258	<0.5	<0.5	NA	< 0.5	95%	70%	130%	116%	80%	120%	87%	70%	130%
Boron	9032258	9032258	7	6	NA	< 5	86%	70%	130%	111%	80%	120%	81%	70%	130%
Boron (Hot Water Soluble)	9032258	9032258	0.10	0.11	NA	< 0.10	102%	60%	140%	93%	70%	130%	92%	60%	140%
Cadmium	9032258	9032258	<0.5	<0.5	NA	< 0.5	110%	70%	130%	101%	80%	120%	99%	70%	130%
Chromium	9032258	9032258	9	9	NA	< 2	91%	70%	130%	94%	80%	120%	90%	70%	130%
Cobalt	9032258	9032258	4.4	4.2	2.7%	< 0.5	97%	70%	130%	96%	80%	120%	94%	70%	130%
Copper	9032258	9032258	16	15	5.9%	< 1	98%	70%	130%	100%	80%	120%	85%	70%	130%
Lead	9032258	9032258	4	4	NA	< 1	111%	70%	130%	95%	80%	120%	85%	70%	130%
Molybdenum	9032258	9032258	<0.5	<0.5	NA	< 0.5	102%	70%	130%	98%	80%	120%	99%	70%	130%
Nickel	9032258	9032258	9	8	8.0%	< 1	100%	70%	130%	104%	80%	120%	93%	70%	130%
Selenium	9032258	9032258	<0.4	<0.4	NA	< 0.4	122%	70%	130%	105%	80%	120%	102%	70%	130%
Silver	9032258	9032258	<0.2	<0.2	NA	< 0.2	91%	70%	130%	94%	80%	120%	89%	70%	130%
Thallium	9032258	9032258	<0.4	<0.4	NA	< 0.4	88%	70%	130%	106%	80%	120%	97%	70%	130%
Uranium	9032258	9032258	<0.5	<0.5	NA	< 0.5	90%	70%	130%	108%	80%	120%	102%	70%	130%
Vanadium	9032258	9032258	12	11	3.6%	< 1	86%	70%	130%	100%	80%	120%	86%	70%	130%
Zinc	9032258	9032258	19	18	NA	< 5	101%	70%	130%	103%	80%	120%	99%	70%	130%
Chromium VI	9032547		<0.2	<0.2	NA	< 0.2	73%	70%	130%	99%	80%	120%	84%	70%	130%
Cyanide	9032258	9032258	<0.040	<0.040	NA	< 0.040	92%	70%	130%	91%	80%	120%	108%	70%	130%
Mercury	9032258	9032258	<0.10	<0.10	NA	< 0.10	116%	70%	130%	99%	80%	120%	93%	70%	130%
Electrical Conductivity	9032258	9032258	0.107	0.109	1.9%	< 0.005	99%	90%	110%						
Sodium Adsorption Ratio	9032258	9032258	0.104	0.102	2.1%	NA									
pH, 2:1 CaCl2 Extraction	9032258	9032258	7.99	7.95	0.5%	NA	101%	80%	120%						

Comments: NA signifies Not Applicable.

Certified By:

divine Basil

Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Feb 02, 2018			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 (with PAHs) (Soil)

F1 (C6 to C10)	9032284	9032284	< 5	< 5	NA	< 5	85%	60%	130%	90%	85%	115%	76%	70%	130%
F2 (C10 to C16)	9032279	9032279	< 10	< 10	NA	< 10	101%	60%	130%	100%	80%	120%	94%	70%	130%
F3 (C16 to C34)	9032279	9032279	< 50	< 50	NA	< 50	100%	60%	130%	112%	80%	120%	99%	70%	130%
F4 (C34 to C50)	9032279	9032279	< 50	< 50	NA	< 50	94%	60%	130%	104%	80%	120%	90%	70%	130%

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

Dichlorodifluoromethane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	120%	50%	140%	101%	50%	140%	73%	50%	140%
Vinyl Chloride	9032284	9032284	< 0.02	< 0.02	NA	< 0.02	124%	50%	140%	117%	50%	140%	117%	50%	140%
Bromomethane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	89%	50%	140%	90%	50%	140%
Trichlorofluoromethane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	120%	50%	140%	104%	50%	140%	86%	50%	140%
Acetone	9032284	9032284	< 0.50	< 0.50	NA	< 0.50	91%	50%	140%	98%	50%	140%	91%	50%	140%
1,1-Dichloroethylene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	117%	60%	130%	87%	50%	140%
Methylene Chloride	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	108%	60%	130%	111%	50%	140%
Trans- 1,2-Dichloroethylene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	70%	50%	140%	115%	60%	130%	87%	50%	140%
Methyl tert-butyl Ether	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	79%	60%	130%	88%	50%	140%
1,1-Dichloroethane	9032284	9032284	< 0.02	< 0.02	NA	< 0.02	79%	50%	140%	116%	60%	130%	81%	50%	140%
Methyl Ethyl Ketone	9032284	9032284	< 0.50	< 0.50	NA	< 0.50	82%	50%	140%	89%	50%	140%	85%	50%	140%
Cis- 1,2-Dichloroethylene	9032284	9032284	< 0.02	< 0.02	NA	< 0.02	77%	50%	140%	118%	60%	130%	81%	50%	140%
Chloroform	9032284	9032284	< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	112%	60%	130%	88%	50%	140%
1,2-Dichloroethane	9032284	9032284	< 0.03	< 0.03	NA	< 0.03	86%	50%	140%	121%	60%	130%	100%	50%	140%
1,1,1-Trichloroethane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	122%	60%	130%	86%	50%	140%
Carbon Tetrachloride	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	121%	60%	130%	77%	50%	140%
Benzene	9032284	9032284	< 0.02	< 0.02	NA	< 0.02	81%	50%	140%	111%	60%	130%	79%	50%	140%
1,2-Dichloropropane	9032284	9032284	< 0.03	< 0.03	NA	< 0.03	90%	50%	140%	116%	60%	130%	84%	50%	140%
Trichloroethylene	9032284	9032284	< 0.03	< 0.03	NA	< 0.03	77%	50%	140%	116%	60%	130%	77%	50%	140%
Bromodichloromethane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	124%	60%	130%	84%	50%	140%
Methyl Isobutyl Ketone	9032284	9032284	< 0.50	< 0.50	NA	< 0.50	97%	50%	140%	97%	50%	140%	81%	50%	140%
1,1,2-Trichloroethane	9032284	9032284	< 0.04	< 0.04	NA	< 0.04	108%	50%	140%	118%	60%	130%	91%	50%	140%
Toluene	9032284	9032284	< 0.02	< 0.02	NA	< 0.02	102%	50%	140%	123%	60%	130%	82%	50%	140%
Dibromochloromethane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	123%	50%	140%	109%	60%	130%	81%	50%	140%
Ethylene Dibromide	9032284	9032284	< 0.04	< 0.04	NA	< 0.04	118%	50%	140%	119%	60%	130%	88%	50%	140%
Tetrachloroethylene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	116%	60%	130%	78%	50%	140%
1,1,1,2-Tetrachloroethane	9032284	9032284	< 0.04	< 0.04	NA	< 0.04	113%	50%	140%	118%	60%	130%	81%	50%	140%
Chlorobenzene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	124%	50%	140%	104%	60%	130%	84%	50%	140%
Ethylbenzene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	112%	60%	130%	73%	50%	140%
m & p-Xylene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	125%	50%	140%	101%	60%	130%	82%	50%	140%
Bromoform	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	116%	60%	130%	83%	50%	140%
Styrene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	106%	60%	130%	73%	50%	140%
1,1,2,2-Tetrachloroethane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	111%	60%	130%	94%	50%	140%
o-Xylene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	115%	60%	130%	86%	50%	140%

AGAT QUALITY ASSURANCE REPORT (V1)

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AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested

Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Feb 02, 2018			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
1,3-Dichlorobenzene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	106%	60%	130%	74%	50%	140%
1,4-Dichlorobenzene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	118%	60%	130%	87%	50%	140%
1,2-Dichlorobenzene	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	112%	60%	130%	78%	50%	140%
1,3-Dichloropropene	9032284	9032284	< 0.04	< 0.04	NA	< 0.04	99%	50%	140%	102%	60%	130%	98%	50%	140%
n-Hexane	9032284	9032284	< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	94%	60%	130%	74%	50%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	9021500		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	104%	50%	140%	106%	50%	140%
Acenaphthylene	9021500		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	104%	50%	140%	94%	50%	140%
Acenaphthene	9021500		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	102%	50%	140%	95%	50%	140%
Fluorene	9021500		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	105%	50%	140%	110%	50%	140%
Phenanthrene	9021500		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	93%	50%	140%	109%	50%	140%
Anthracene	9021500		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	98%	50%	140%	105%	50%	140%
Fluoranthene	9021500		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	101%	50%	140%	110%	50%	140%
Pyrene	9021500		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	93%	50%	140%	115%	50%	140%
Benz(a)anthracene	9021500		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	50%	140%	98%	50%	140%
Chrysene	9021500		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	96%	50%	140%	107%	50%	140%
Benzo(b)fluoranthene	9021500		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	99%	50%	140%	104%	50%	140%
Benzo(k)fluoranthene	9021500		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	105%	50%	140%	89%	50%	140%
Benzo(a)pyrene	9021500		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	95%	50%	140%	88%	50%	140%
Indeno(1,2,3-cd)pyrene	9021500		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	105%	50%	140%	102%	50%	140%
Dibenz(a,h)anthracene	9021500		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	97%	50%	140%	103%	50%	140%
Benzo(g,h,i)perylene	9021500		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	87%	50%	140%	96%	50%	140%
2-and 1-methyl Naphthalene	9021500		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	104%	50%	140%	102%	50%	140%
O. Reg. 153(511) - OC Pesticides + PCBs (Soil)															
Gamma-Hexachlorocyclohexane	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	103%	50%	140%	90%	50%	140%	80%	50%	140%
Heptachlor	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	95%	50%	140%	88%	50%	140%	104%	50%	140%
Aldrin	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	86%	50%	140%	96%	50%	140%	96%	50%	140%
Heptachlor Epoxide	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	88%	50%	140%	104%	50%	140%	108%	50%	140%
Endosulfan	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	83%	50%	140%	102%	50%	140%	90%	50%	140%
Chlordane	9032260	9032260	< 0.007	< 0.007	NA	< 0.007	86%	50%	140%	104%	50%	140%	110%	50%	140%
DDD	9032260	9032260	0.018	0.016	NA	< 0.007	107%	50%	140%	116%	50%	140%	101%	50%	140%
DDE	9032260	9032260	0.31	0.27	13.8%	< 0.007	90%	50%	140%	106%	50%	140%	104%	50%	140%
DDT	9032260	9032260	0.12	0.14	15.4%	< 0.007	91%	50%	140%	101%	50%	140%	90%	50%	140%
Dieldrin	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	86%	50%	140%	104%	50%	140%	106%	50%	140%
Endrin	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	104%	50%	140%	114%	50%	140%	108%	50%	140%
Methoxychlor	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	82%	50%	140%	118%	50%	140%	112%	50%	140%
Hexachlorobenzene	9032260	9032260	< 0.005	< 0.005	NA	< 0.005	90%	50%	140%	110%	50%	140%	96%	50%	140%
Hexachlorobutadiene	9032260	9032260	< 0.01	< 0.01	NA	< 0.01	101%	50%	140%	98%	50%	140%	88%	50%	140%



Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD.

PROJECT: 1776196 (6000)

SAMPLING SITE:

AGAT WORK ORDER: 18T305926

ATTENTION TO: Christi Groves

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Feb 02, 2018			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
Hexachloroethane	9032260	9032260	< 0.01	< 0.01	NA	< 0.01	102%	50%	140%	104%	50%	140%	76%	50%	140%
Aroclor 1242	9032260	9032260	< 0.10	< 0.10	NA	< 0.10	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	9032260	9032260	< 0.10	< 0.10	NA	< 0.10	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	9032260	9032260	< 0.10	< 0.10	NA	< 0.10	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	9032260	9032260	< 0.10	< 0.10	NA	< 0.10	NA	60%	140%	NA	60%	140%	NA	60%	140%
Polychlorinated Biphenyls	9032260	9032260	< 0.10	< 0.10	NA	< 0.10	95%	60%	140%	85%	60%	140%	NA	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: _____

Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

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	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 6010B	ICP/OES
pH, 2:1 CaCl ₂ Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.
AGAT WORK ORDER: 18T305926
PROJECT: 1776196 (6000)
ATTENTION TO: Christi Groves
SAMPLING SITE:
SAMPLED BY:

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
DDD	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
DDE	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
Aroclor 1242	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Aroclor 1248	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Aroclor 1254	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Aroclor 1260	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Polychlorinated Biphenyls	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	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
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34) minus PAHs	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	BALANCE



Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD.

AGAT WORK ORDER: 18T305926

PROJECT: 1776196 (6000)

ATTENTION TO: Christi Groves

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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
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



Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Golder Associates Ltd.
Contact: Chris Groves
Address: 121 Commerce Park Dr. Unit L
Burns ON L4W 8X1
705-722-4492 Fax: 705-722-3786
Phone: 705-722-4492
Reports to be sent to:
1. Email: cgroves@golder.com
2. Email:

Project Information:

Project: 1776196 (6000)
Site Location: Collingwood
Sampled By: D. Hoyle
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐
Company: _____
Contact: _____
Address: _____
Email: _____

Regulatory Requirements:

(Please check all applicable boxes)

☒ Regulation 153/04
Table 8
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine
☐ Sewer Use
☐ Sanitary
☐ Storm
☐ MISA
☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other

Is this submission for a Record of Site Condition?

☐ Yes ☒ No

Report Guideline on Certificate of Analysis

☒ Yes ☐ No

Sample Matrix Legend

B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Field Filtered - Metals, Hg, Cr/V

O. Reg 153

Metals and Inorganics
☐ All Metals ☐ 153 Metals (excl. Hydrides)
☐ Hydride Metals ☐ 153 Metals (incl. Hydrides)
ORPs: ☐ B-HWS ☐ Cl ☐ CN
☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg
☐ pH ☐ SAR
Full Metals Scan

Regulation/Custom Metals

Nutrients: ☐ TP ☐ NH₃ ☐ TKN
☐ NO₃ ☐ NO₂ ☐ NO₃+NO₂

Volatiles: ☒ VOC ☐ BTEX ☐ THM

PHCs F1 - F4

ABNs

PAHs

PCBs ☒ Total ☐ Aroclors

Organochlorine Pesticides

TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs

Sewer Use

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Metals and Inorganics	ORPs	Full Metals Scan	Regulation/Custom Metals	Nutrients	Volatiles	PHCs F1 - F4	ABNs	PAHs	PCBs	Organochlorine Pesticides	TCLP	Sewer Use
TP18-1-2	25-Jan-18	10:20	6	S			X					X	X		X				
TP18-1-3		10:30	6	S			X					X	X		X				
TP18-2-2		11:45	3	S			X					X	X		X				
TP18-2-3		11:50	6	S			X					X	X		X				
TP18-3-3		12:40	6	S			X					X	X		X				
TP18-3-5		1:00	4	S			X					X	X		X				
DUP1		11:45	3	S			X					X	X		X				
DUP2		1:00	2	S			X					X	X		X				

Samples Relinquished By (Print Name and Sign): <u>Dawn Hoyle</u>	Date: <u>25-Jan-18</u>	Time: <u>8:30 AM</u>	Samples Received By (Print Name and Sign): <u>[Signature]</u>	Date: <u>01/26/18</u>	Time: <u>11:15</u>
Samples Relinquished By (Print Name and Sign): <u>[Signature]</u>	Date: <u>01/26/18</u>	Time: <u>4:40</u>	Samples Received By (Print Name and Sign): <u>[Signature]</u>	Date: _____	Time: _____

Laboratory Use Only

Work Order #: 18T305926

Cooler Quantity: _____

Arrival Temperatures: 3.9 3.9 3.7
2.9 2.9 2.7

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: _____

Turnaround Time (TAT) Required:

Regular TAT

☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days

☐ 2 Business Days

☐ Next Business Day

OR Date Required (Rush Surcharges May Apply): _____

Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays

For 'Same Day' analysis, please contact your AGAT CPM



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