Appendix A- Field Reports

Sediment Sampling

Sediment Sampling Field Inspection ID:
000002

Conducted on:
07 Nov 2017 10:34 AM

Prepared by:
Steven Scott

Assisted By:
Tochi Azubuike

Completed on
07 Nov 2017 03:30 PM

Score
0/0.0 - 0.00%

Audit

Question	Response	Details
Project Name:	Teeterville	
Project Number:	N/A	
Sample Number:		
1		
Site ID:	T1	
Site Description:	Inlet channel	
	10:35 AM	
	Lat Long: 42.952358 | -80.444492 DMS: 42° 57' 8.49'' N | 80° 26' 40.17'' W UTM: E: 545313.59 N: 4755673.98 Zone: 17 T MGRS: 17TNH 45314 55674	
Site Type:	Inlet	
Photos:		
 Appendix 1  Appendix 2  Appendix 3  Appendix 4  Appendix 5		
General Comments:	Sandy composition. Hard packed.	
2		
Site ID:	T2	
Site Description:	Upstream mouth of reservoir.	
	11:01 AM	
	Lat Long: 42.951048 | -80.445058 DMS: 42° 57' 3.77'' N | 80° 26' 42.21'' W UTM: E: 545268.33 N: 4755528.13 Zone: 17 T MGRS: 17TNH 45268 55528	
Site Type:	Inlet	

Question	Response	Details
Photos:  Appendix 6  Appendix 7  Appendix 8  Appendix 9		
General Comments:	Porridge consistency. Grey/Brown mixture.	
3		
Site ID:	T4	
Site Description:	Western side of main reservoir.	
	11:38 AM	
	Lat Long: 42.949713 | -80.446487 DMS: 42° 56' 58.97'' N | 80° 26' 47.35'' W UTM: E: 545152.75 N: 4755379.19 Zone: 17 T MGRS: 17TNH 45153 55379	
Site Type:	Main Cell	
Photos:  Appendix 10  Appendix 11  Appendix 12  Appendix 13		
General Comments:	Thicker and darker than T2. During core, first foot was quite soft then thickened up at deeper depths.	
4		
Site ID:	T3	
Site Description:	Main cell. East side.	
	12:16 PM	

Question	Response	Details
	Lat Long: 42.949603 | -80.444263 DMS: 42° 56' 58.57'' N | 80° 26' 39.35'' W UTM: E: 545334.30 N: 4755368.13 Zone: 17 T MGRS: 17TNH 45334 55368	
Site Type:	Main Cell	
Photos:  Appendix 14  Appendix 15  Appendix 16  Appendix 17		
General Comments:	Thinner consistency then rest of samples.	
5		
Site ID:	T5	
Site Description:	Southwestern "finger" of main cell	
	02:25 PM	
	Lat Long: 42.948483 | -80.446739 DMS: 42° 56' 54.54'' N | 80° 26' 48.26'' W UTM: E: 545133.08 N: 4755242.42 Zone: 17 T MGRS: 17TNH 45133 55242	
Site Type:	Main Cell	
Photos:  Appendix 18  Appendix 19  Appendix 20  Appendix 21		
General Comments:	Clay and sand thick mix. Light brown/red flakes.	
6		
Site ID:	T6	

Question	Response	Details
Site Description:	Main deep reservoir immediately in front of dam.	
	02:55 PM	
	Lat Long: 42.947488 | -80.444864 DMS: 42° 56' 50.96'' N | 80° 26' 41.51'' W UTM: E: 545286.78 N: 4755132.92 Zone: 17 T MGRS: 17TNH 45287 55133	
Site Type:	Main Cell	
Photos:  Appendix 22  Appendix 23  Appendix 24  Appendix 25		
General Comments:	Hard packed at location of sample. Soupy consistency.	
7		
Site ID:	T7	
Site Description:	Downstream channel	
	03:21 PM	
	Lat Long: 42.945871 | -80.447011 DMS: 42° 56' 45.14'' N | 80° 26' 49.24'' W UTM: E: 545112.83 N: 4754952.25 Zone: 17 T MGRS: 17TNH 45113 54952	
Site Type:	Outlet	
Photos:  Appendix 26  Appendix 27  Appendix 28  Appendix 29		
General Comments:	Deep water channel (almost 1.5m). Sandy and gravelly with bio material.	

Media

Appendix 1

Appendix 2

Appendix 3

Appendix 4

Appendix 5

Appendix 6

Appendix 7

Appendix 8

Appendix 9

Appendix 10

Appendix 11

Appendix 12

Appendix 13

Appendix 14

Appendix 15

Appendix 16

Appendix 17

Appendix 18

Appendix 19

Appendix 20

Appendix 21

Appendix 22

Appendix 23

Appendix 24

Appendix 25

Appendix 26

Appendix 27

Appendix 28

Appendix 29

Appendix B- Lab Results

AECOM CANADA LTD. - KITCHENER
ATTN: Zahra Parhizgari
50 Sportsworld Crossing Road
Suite 290
KITCHENER ON N2P 0A4

Date Received: 08-NOV-17
Report Date: 22-NOV-17 14:05 (MT)
Version: FINAL

Client Phone: 519-650-5313

Certificate of Analysis

Lab Work Order #: L2019990

Project P.O. #: NOT SUBMITTED
Job Reference: 60554673
C of C Numbers:
Legal Site Desc:

Mary-Lynn Pike
Client Services Supervisor

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-1 T1 Sampled By: S. SCOTT on 07-NOV-17 @ 10:35 Matrix: SOIL							
Physical Tests							
Density	1920		10	kg/m3		14-NOV-17	R3884938
% Moisture	17.7		0.10	%	10-NOV-17	10-NOV-17	R3882176
Total Solids	82.0		0.10	%	13-NOV-17	13-NOV-17	R3884637
Particle Size							
% >75um	98.4		1.0	%	16-NOV-17	17-NOV-17	R3886974
Leachable Anions & Nutrients							
Ammonia as N	11		10	mg/kg	10-NOV-17	13-NOV-17	R3884725
Total Kjeldahl Nitrogen	<0.020		0.020	%	15-NOV-17	15-NOV-17	R3885839
Anions and Nutrients							
Nitrate and Nitrite as N	<1.4		1.4	mg/kg		12-NOV-17	
Nitrate-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478
Nitrite-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0026		0.0010	g/g	20-NOV-17	21-NOV-17	R3892250
Total Organic Carbon	0.26		0.10	%	20-NOV-17	21-NOV-17	R3892250
Plant Available Nutrients							
Available Nitrate-N	2.6		1.0	mg/kg	15-NOV-17	15-NOV-17	R3885754
Available Phosphate-P	<2.0		2.0	mg/kg	15-NOV-17	15-NOV-17	R3885808
Available Potassium	<20		20	mg/kg	15-NOV-17	15-NOV-17	R3885808
Bacteriological Tests							
E. Coli	<10		10	CFU/g dwt	09-NOV-17	10-NOV-17	R3888870
Metals							
Phosphorus (P)	321		50	ug/g	16-NOV-17	16-NOV-17	R3886856
Aggregate Organics							
Oil and Grease, Total	<500		500	mg/kg	15-NOV-17	15-NOV-17	R3886167
L2019990-2 T2 Sampled By: S. SCOTT on 07-NOV-17 @ 11:01 Matrix: SOIL							
Physical Tests							
Density	1420		10	kg/m3		14-NOV-17	R3884938
% Moisture	46.7		0.10	%	13-NOV-17	14-NOV-17	R3884071
Particle Size							
% >75um	79.3		1.0	%	16-NOV-17	17-NOV-17	R3886974
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Arsenic (As)	1.9		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Barium (Ba)	46.4		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Beryllium (Be)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886856
Boron (B)	<5.0		5.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Boron (B), Hot Water Ext.	0.85		0.10	ug/g	16-NOV-17	16-NOV-17	R3886231
Cadmium (Cd)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886856
Chromium (Cr)	6.8		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Cobalt (Co)	2.2		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-2 T2 Sampled By: S. SCOTT on 07-NOV-17 @ 11:01 Matrix: SOIL							
Metals							
Copper (Cu)	5.4		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Lead (Pb)	4.3		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Mercury (Hg)	0.0165		0.0050	ug/g	16-NOV-17	16-NOV-17	R3886476
Molybdenum (Mo)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Nickel (Ni)	3.9		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Selenium (Se)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Silver (Ag)	<0.20		0.20	ug/g	16-NOV-17	16-NOV-17	R3886856
Thallium (Tl)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886856
Uranium (U)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Vanadium (V)	13.8		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Zinc (Zn)	29.9		5.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Speciated Metals							
Chromium, Hexavalent	<0.20		0.20	ug/g	13-NOV-17	14-NOV-17	R3885187
Volatile Organic Compounds							
Acetone	<0.50		0.50	ug/g	10-NOV-17	13-NOV-17	R3883452
Benzene	<0.0068		0.0068	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromodichloromethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromoform	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromomethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Carbon tetrachloride	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Chlorobenzene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Dibromochloromethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Chloroform	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dibromoethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichlorobenzene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,3-Dichlorobenzene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,4-Dichlorobenzene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Dichlorodifluoromethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1-Dichloroethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichloroethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1-Dichloroethylene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
cis-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
trans-1,2-Dichloroethylene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Methylene Chloride	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichloropropane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
cis-1,3-Dichloropropene	<0.030		0.030	ug/g	10-NOV-17	13-NOV-17	R3883452
trans-1,3-Dichloropropene	<0.030		0.030	ug/g	10-NOV-17	13-NOV-17	R3883452
1,3-Dichloropropene (cis & trans)	<0.042		0.042	ug/g		14-NOV-17	
Ethylbenzene	<0.018		0.018	ug/g	10-NOV-17	13-NOV-17	R3883452
n-Hexane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Methyl Ethyl Ketone	<0.50		0.50	ug/g	10-NOV-17	13-NOV-17	R3883452

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-2 T2 Sampled By: S. SCOTT on 07-NOV-17 @ 11:01 Matrix: SOIL							
Volatile Organic Compounds							
Methyl Isobutyl Ketone	<0.50		0.50	ug/g	10-NOV-17	13-NOV-17	R3883452
MTBE	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Styrene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,1,2-Tetrachloroethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,2,2-Tetrachloroethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Tetrachloroethylene	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Toluene	<0.080		0.080	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,1-Trichloroethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,2-Trichloroethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Trichloroethylene	<0.010		0.010	ug/g	10-NOV-17	13-NOV-17	R3883452
Trichlorofluoromethane	<0.050		0.050	ug/g	10-NOV-17	13-NOV-17	R3883452
Vinyl chloride	<0.020		0.020	ug/g	10-NOV-17	13-NOV-17	R3883452
o-Xylene	<0.020		0.020	ug/g	10-NOV-17	13-NOV-17	R3883452
m+p-Xylenes	<0.030		0.030	ug/g	10-NOV-17	13-NOV-17	R3883452
Xylenes (Total)	<0.050		0.050	ug/g		14-NOV-17	
Surrogate: 4-Bromofluorobenzene	87.3		50-140	%	10-NOV-17	13-NOV-17	R3883452
Surrogate: 1,4-Difluorobenzene	87.6		50-140	%	10-NOV-17	13-NOV-17	R3883452
Hydrocarbons							
F1 (C6-C10)	<5.0		5.0	ug/g	10-NOV-17	13-NOV-17	R3883452
F1-BTEX	<5.0		5.0	ug/g		20-NOV-17	
F2 (C10-C16)	<10		10	ug/g	14-NOV-17	16-NOV-17	R3887134
F2-Naphth	<10		10	ug/g		20-NOV-17	
F3 (C16-C34)	<50		50	ug/g	14-NOV-17	16-NOV-17	R3887134
F3-PAH	<50		50	ug/g		20-NOV-17	
F4 (C34-C50)	<50		50	ug/g	14-NOV-17	16-NOV-17	R3887134
Total Hydrocarbons (C6-C50)	<72		72	ug/g		20-NOV-17	
Chrom. to baseline at nC50	YES				14-NOV-17	16-NOV-17	R3887134
Surrogate: 2-Bromobenzotrifluoride	87.8		60-140	%	14-NOV-17	16-NOV-17	R3887134
Surrogate: 3,4-Dichlorotoluene	89.5		60-140	%	10-NOV-17	13-NOV-17	R3883452
Polycyclic Aromatic Hydrocarbons							
1+2-Methylnaphthalenes	<0.085		0.085	ug/g		16-NOV-17	
Semi-Volatile Organics							
Acenaphthene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Acenaphthylene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Anthracene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(a)anthracene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(a)pyrene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(b)fluoranthene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(ghi)perylene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(k)fluoranthene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Biphenyl	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
4-Chloroaniline	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-2 T2 Sampled By: S. SCOTT on 07-NOV-17 @ 11:01 Matrix: SOIL							
Semi-Volatile Organics							
Bis(2-chloroethyl)ether	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Bis(2-chloroisopropyl)ether	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2-Chlorophenol	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Chrysene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Dibenzo(a,h)anthracene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
3,3'-Dichlorobenzidine	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dichlorophenol	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Diethylphthalate	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Dimethylphthalate	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dimethylphenol	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dinitrophenol	<2.0	DLM	2.0	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dinitrotoluene	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2,6-Dinitrotoluene	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4+2,6-Dinitrotoluene	<0.28		0.28	ug/g		16-NOV-17	
Bis(2-ethylhexyl)phthalate	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Fluoranthene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Fluorene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Indeno(1,2,3-cd)pyrene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
1-Methylnaphthalene	<0.060	DLM	0.060	ug/g	13-NOV-17	16-NOV-17	R3886157
2-Methylnaphthalene	<0.060	DLM	0.060	ug/g	13-NOV-17	16-NOV-17	R3886157
Naphthalene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Pentachlorophenol	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Phenanthrene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
Phenol	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Pyrene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
1,2,4-Trichlorobenzene	<0.10	DLM	0.10	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4,5-Trichlorophenol	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4,6-Trichlorophenol	<0.20	DLM	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Surrogate: 2-Fluorobiphenyl	91.9		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: Nitrobenzene d5	86.8		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: Phenol d5	91.6		30-130	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: p-Terphenyl d14	88.5		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: 2,4,6-Tribromophenol	83.0		50-140	%	13-NOV-17	16-NOV-17	R3886157
Organochlorine Pesticides							
Aldrin	<0.020	DLM	0.020	ug/g	10-NOV-17	20-NOV-17	R3887273
gamma-hexachlorocyclohexane	<0.010		0.010	ug/g	10-NOV-17	17-NOV-17	R3887273
a-chlordane	<0.0050		0.0050	ug/g	10-NOV-17	17-NOV-17	R3887273
Chlordane (Total)	<0.0071		0.0071	ug/g		20-NOV-17	
g-chlordane	<0.0050		0.0050	ug/g	10-NOV-17	17-NOV-17	R3887273
op-DDD	<0.0050		0.0050	ug/g	10-NOV-17	17-NOV-17	R3887273
pp-DDD	<0.060	DLQ	0.060	ug/g	10-NOV-17	17-NOV-17	R3887273

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-2 T2 Sampled By: S. SCOTT on 07-NOV-17 @ 11:01 Matrix: SOIL							
Organochlorine Pesticides							
Total DDD	<0.071		0.071	ug/g		20-NOV-17	
o,p-DDE	<0.0030		0.0030	ug/g	10-NOV-17	17-NOV-17	R3887273
pp-DDE	<0.0040	DLQ	0.0040	ug/g	10-NOV-17	17-NOV-17	R3887273
Total DDE	<0.042		0.042	ug/g		20-NOV-17	
op-DDT	<0.050	DLM	0.050	ug/g	10-NOV-17	20-NOV-17	R3887273
pp-DDT	<0.050	DLM	0.050	ug/g	10-NOV-17	20-NOV-17	R3887273
Total DDT	<0.071		0.071	ug/g		20-NOV-17	
Dieldrin	<0.020	DLM	0.020	ug/g	10-NOV-17	20-NOV-17	R3887273
Endosulfan I	<0.20	DLM	0.20	ug/g	10-NOV-17	20-NOV-17	R3887273
Endosulfan II	<0.020		0.020	ug/g	10-NOV-17	17-NOV-17	R3887273
Endosulfan (Total)	<0.28		0.28	ug/g		20-NOV-17	
Endrin	<0.0030		0.0030	ug/g	10-NOV-17	17-NOV-17	R3887273
Heptachlor	<0.20	DLM	0.20	ug/g	10-NOV-17	20-NOV-17	R3887273
Heptachlor Epoxide	<0.0050		0.0050	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachlorobenzene	<0.010		0.010	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachlorobutadiene	<0.010		0.010	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachloroethane	<0.10	DLM	0.10	ug/g	10-NOV-17	20-NOV-17	R3887273
Methoxychlor	<0.20	DLM	0.20	ug/g	10-NOV-17	20-NOV-17	R3887273
Surrogate: 2-Fluorobiphenyl	100.2		50-140	%	10-NOV-17	17-NOV-17	R3887273
Surrogate: d14-Terphenyl	103.1		50-140	%	10-NOV-17	17-NOV-17	R3887273
L2019990-3 T3 Sampled By: S. SCOTT on 07-NOV-17 @ 12:16 Matrix: SOIL							
Physical Tests							
Density	1210		10	kg/m3		14-NOV-17	R3884938
% Moisture	73.9		0.10	%	14-NOV-17	14-NOV-17	R3885161
Total Solids	26.9		0.10	%	13-NOV-17	13-NOV-17	R3884637
Particle Size							
% >75um	19.1		1.0	%	16-NOV-17	17-NOV-17	R3886974
Leachable Anions & Nutrients							
Ammonia as N	365		10	mg/kg	10-NOV-17	13-NOV-17	R3884725
Total Kjeldahl Nitrogen	0.56	DLHC	0.10	%	15-NOV-17	15-NOV-17	R3885839
Anions and Nutrients							
Nitrate and Nitrite as N	<1.4		1.4	mg/kg		16-NOV-17	
Nitrate-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478
Nitrite-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0557		0.0010	g/g	20-NOV-17	21-NOV-17	R3892250
Total Organic Carbon	5.57		0.10	%	20-NOV-17	21-NOV-17	R3892250
Plant Available Nutrients							
Available Nitrate-N	5.0		1.0	mg/kg	15-NOV-17	15-NOV-17	R3885754
Available Phosphate-P	2.1		2.0	mg/kg	15-NOV-17	15-NOV-17	R3885808

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-3 T3 Sampled By: S. SCOTT on 07-NOV-17 @ 12:16 Matrix: SOIL							
Plant Available Nutrients							
Available Potassium	66		20	mg/kg	15-NOV-17	15-NOV-17	R3885808
Bacteriological Tests							
E. Coli	<10		10	CFU/g dwt	09-NOV-17	10-NOV-17	R3888870
Metals							
Phosphorus (P)	748		50	ug/g	16-NOV-17	16-NOV-17	R3886856
Aggregate Organics							
Oil and Grease, Total	540		500	mg/kg	15-NOV-17	15-NOV-17	R3886167
L2019990-4 T4 Sampled By: S. SCOTT on 07-NOV-17 @ 11:38 Matrix: SOIL							
Physical Tests							
Density	1240		10	kg/m3		14-NOV-17	R3884938
% Moisture	73.4		0.10	%	13-NOV-17	14-NOV-17	R3884071
Particle Size							
% >75um	24.5		1.0	%	16-NOV-17	17-NOV-17	R3886974
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Arsenic (As)	4.5		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Barium (Ba)	173		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Beryllium (Be)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886856
Boron (B)	6.9		5.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Boron (B), Hot Water Ext.	1.06		0.10	ug/g	16-NOV-17	16-NOV-17	R3886231
Cadmium (Cd)	0.54		0.50	ug/g	16-NOV-17	16-NOV-17	R3886856
Chromium (Cr)	10.4		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Cobalt (Co)	4.1		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Copper (Cu)	15.7		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Lead (Pb)	13.8		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Mercury (Hg)	0.0539		0.0050	ug/g	16-NOV-17	16-NOV-17	R3886476
Molybdenum (Mo)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Nickel (Ni)	7.8		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Selenium (Se)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Silver (Ag)	<0.20		0.20	ug/g	16-NOV-17	16-NOV-17	R3886856
Thallium (Tl)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886856
Uranium (U)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Vanadium (V)	18.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Zinc (Zn)	67.2		5.0	ug/g	16-NOV-17	16-NOV-17	R3886856
Speciated Metals							
Chromium, Hexavalent	<0.40	DLHM	0.40	ug/g	13-NOV-17	14-NOV-17	R3885187
Volatile Organic Compounds							
Acetone	<1.5	DLHM	1.5	ug/g	10-NOV-17	13-NOV-17	R3883452
Benzene	<0.020	DLHM	0.020	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromodichloromethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromoform	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-4 T4 Sampled By: S. SCOTT on 07-NOV-17 @ 11:38 Matrix: SOIL							
Volatile Organic Compounds							
Bromomethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Carbon tetrachloride	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Chlorobenzene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Dibromochloromethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Chloroform	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dibromoethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichlorobenzene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,3-Dichlorobenzene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,4-Dichlorobenzene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Dichlorodifluoromethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1-Dichloroethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichloroethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1-Dichloroethylene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
cis-1,2-Dichloroethylene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
trans-1,2-Dichloroethylene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Methylene Chloride	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichloropropane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
cis-1,3-Dichloropropene	<0.090	DLHM	0.090	ug/g	10-NOV-17	13-NOV-17	R3883452
trans-1,3-Dichloropropene	<0.090	DLHM	0.090	ug/g	10-NOV-17	13-NOV-17	R3883452
1,3-Dichloropropene (cis & trans)	<0.13		0.13	ug/g		14-NOV-17	
Ethylbenzene	<0.054	DLHM	0.054	ug/g	10-NOV-17	13-NOV-17	R3883452
n-Hexane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Methyl Ethyl Ketone	<1.5	DLHM	1.5	ug/g	10-NOV-17	13-NOV-17	R3883452
Methyl Isobutyl Ketone	<1.5	DLHM	1.5	ug/g	10-NOV-17	13-NOV-17	R3883452
MTBE	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Styrene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,1,2-Tetrachloroethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,2,2-Tetrachloroethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Tetrachloroethylene	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Toluene	<0.24	DLHM	0.24	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,1-Trichloroethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,2-Trichloroethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Trichloroethylene	<0.030	DLHM	0.030	ug/g	10-NOV-17	13-NOV-17	R3883452
Trichlorofluoromethane	<0.15	DLHM	0.15	ug/g	10-NOV-17	13-NOV-17	R3883452
Vinyl chloride	<0.060	DLHM	0.060	ug/g	10-NOV-17	13-NOV-17	R3883452
o-Xylene	<0.060	DLHM	0.060	ug/g	10-NOV-17	13-NOV-17	R3883452
m+p-Xylenes	<0.090	DLHM	0.090	ug/g	10-NOV-17	13-NOV-17	R3883452
Xylenes (Total)	<0.11		0.11	ug/g		14-NOV-17	
Surrogate: 4-Bromofluorobenzene	80.4		50-140	%	10-NOV-17	13-NOV-17	R3883452
Surrogate: 1,4-Difluorobenzene	79.2		50-140	%	10-NOV-17	13-NOV-17	R3883452
Hydrocarbons							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-4 T4 Sampled By: S. SCOTT on 07-NOV-17 @ 11:38 Matrix: SOIL							
Hydrocarbons							
F1 (C6-C10)	<15	DLHM	15	ug/g	10-NOV-17	13-NOV-17	R3883452
F1-BTEX	<15		15	ug/g		20-NOV-17	
F2 (C10-C16)	<30	DLHM	30	ug/g	14-NOV-17	17-NOV-17	R3887134
F2-Naphth	<30		30	ug/g		20-NOV-17	
F3 (C16-C34)	<150	DLHM	150	ug/g	14-NOV-17	17-NOV-17	R3887134
F3-PAH	<150		150	ug/g		20-NOV-17	
F4 (C34-C50)	<150	DLHM	150	ug/g	14-NOV-17	17-NOV-17	R3887134
Total Hydrocarbons (C6-C50)	<210		210	ug/g		20-NOV-17	
Chrom. to baseline at nC50	YES				14-NOV-17	17-NOV-17	R3887134
Surrogate: 2-Bromobenzotrifluoride	88.1		60-140	%	14-NOV-17	17-NOV-17	R3887134
Surrogate: 3,4-Dichlorotoluene	82.7		60-140	%	10-NOV-17	13-NOV-17	R3883452
Polycyclic Aromatic Hydrocarbons							
1+2-Methylnaphthalenes	<0.26		0.26	ug/g		16-NOV-17	
Semi-Volatile Organics							
Acenaphthene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Acenaphthylene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Anthracene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(a)anthracene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(a)pyrene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(b)fluoranthene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(ghi)perylene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(k)fluoranthene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Biphenyl	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
4-Chloroaniline	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Bis(2-chloroethyl)ether	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Bis(2-chloroisopropyl)ether	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
2-Chlorophenol	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Chrysene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Dibenzo(a,h)anthracene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
3,3'-Dichlorobenzidine	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dichlorophenol	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Diethylphthalate	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Dimethylphthalate	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dimethylphenol	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dinitrophenol	<6.0	DLR	6.0	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dinitrotoluene	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
2,6-Dinitrotoluene	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4+2,6-Dinitrotoluene	<0.85		0.85	ug/g		16-NOV-17	
Bis(2-ethylhexyl)phthalate	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Fluoranthene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Fluorene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-4 T4 Sampled By: S. SCOTT on 07-NOV-17 @ 11:38 Matrix: SOIL							
Semi-Volatile Organics							
Indeno(1,2,3-cd)pyrene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
1-Methylnaphthalene	<0.18	DLR	0.18	ug/g	13-NOV-17	16-NOV-17	R3886157
2-Methylnaphthalene	<0.18	DLR	0.18	ug/g	13-NOV-17	16-NOV-17	R3886157
Naphthalene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Pentachlorophenol	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Phenanthrene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
Phenol	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Pyrene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
1,2,4-Trichlorobenzene	<0.30	DLR	0.30	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4,5-Trichlorophenol	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4,6-Trichlorophenol	<0.60	DLR	0.60	ug/g	13-NOV-17	16-NOV-17	R3886157
Surrogate: 2-Fluorobiphenyl	94.1		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: Nitrobenzene d5	85.7		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: Phenol d5	89.9		30-130	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: p-Terphenyl d14	79.7		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: 2,4,6-Tribromophenol	85.1		50-140	%	13-NOV-17	16-NOV-17	R3886157
Organochlorine Pesticides							
Aldrin	<0.0060	DLHM	0.0060	ug/g	10-NOV-17	17-NOV-17	R3887273
gamma-hexachlorocyclohexane	<0.030	DLHM	0.030	ug/g	10-NOV-17	17-NOV-17	R3887273
a-chlordane	<0.015	DLHM	0.015	ug/g	10-NOV-17	17-NOV-17	R3887273
Chlordane (Total)	<0.021		0.021	ug/g		20-NOV-17	
g-chlordane	<0.015	DLHM	0.015	ug/g	10-NOV-17	17-NOV-17	R3887273
op-DDD	<0.015	DLHM	0.015	ug/g	10-NOV-17	17-NOV-17	R3887273
pp-DDD	<0.020	DLQ	0.020	ug/g	10-NOV-17	17-NOV-17	R3887273
Total DDD	<0.21		0.21	ug/g		20-NOV-17	
o,p-DDE	<0.0090	DLHM	0.0090	ug/g	10-NOV-17	17-NOV-17	R3887273
pp-DDE	<0.020	DLQ	0.020	ug/g	10-NOV-17	17-NOV-17	R3887273
Total DDE	<0.13		0.13	ug/g		20-NOV-17	
op-DDT	<0.15	DLM	0.15	ug/g	10-NOV-17	20-NOV-17	R3887273
pp-DDT	<0.15	DLM	0.15	ug/g	10-NOV-17	20-NOV-17	R3887273
Total DDT	<0.21		0.21	ug/g		20-NOV-17	
Dieldrin	<0.060	DLM	0.060	ug/g	10-NOV-17	20-NOV-17	R3887273
Endosulfan I	<0.060	DLHM	0.060	ug/g	10-NOV-17	17-NOV-17	R3887273
Endosulfan II	<0.060	DLHM	0.060	ug/g	10-NOV-17	17-NOV-17	R3887273
Endosulfan (Total)	<0.085		0.085	ug/g		20-NOV-17	
Endrin	<0.0090	DLHM	0.0090	ug/g	10-NOV-17	17-NOV-17	R3887273
Heptachlor	<0.60	DLM	0.60	ug/g	10-NOV-17	20-NOV-17	R3887273
Heptachlor Epoxide	<0.015	DLHM	0.015	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachlorobenzene	<0.030	DLHM	0.030	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachlorobutadiene	<0.030	DLHM	0.030	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachloroethane	<0.30	DLM	0.30	ug/g	10-NOV-17	20-NOV-17	R3887273

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-4 T4 Sampled By: S. SCOTT on 07-NOV-17 @ 11:38 Matrix: SOIL							
Organochlorine Pesticides							
Methoxychlor	<0.60	DLM	0.60	ug/g	10-NOV-17	20-NOV-17	R3887273
Surrogate: 2-Fluorobiphenyl	75.7		50-140	%	10-NOV-17	17-NOV-17	R3887273
Surrogate: d14-Terphenyl	68.5		50-140	%	10-NOV-17	17-NOV-17	R3887273
L2019990-5 T5 Sampled By: S. SCOTT on 07-NOV-17 @ 14:25 Matrix: SOIL							
Physical Tests							
Density	1230		10	kg/m3		14-NOV-17	R3884938
% Moisture	73.9		0.10	%	14-NOV-17	14-NOV-17	R3885161
Total Solids	27.0		0.10	%	13-NOV-17	13-NOV-17	R3884637
Particle Size							
% >75um	17.3		1.0	%	16-NOV-17	17-NOV-17	R3886974
Leachable Anions & Nutrients							
Ammonia as N	338		10	mg/kg	10-NOV-17	13-NOV-17	R3884725
Total Kjeldahl Nitrogen	0.56	DLHC	0.10	%	15-NOV-17	15-NOV-17	R3885839
Anions and Nutrients							
Nitrate and Nitrite as N	<1.4		1.4	mg/kg		16-NOV-17	
Nitrate-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478
Nitrite-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0554		0.0010	g/g	20-NOV-17	21-NOV-17	R3892250
Total Organic Carbon	5.54		0.10	%	20-NOV-17	21-NOV-17	R3892250
Plant Available Nutrients							
Available Nitrate-N	4.4		1.0	mg/kg	15-NOV-17	15-NOV-17	R3885754
Available Phosphate-P	5.0		2.0	mg/kg	15-NOV-17	15-NOV-17	R3885808
Available Potassium	97		20	mg/kg	15-NOV-17	15-NOV-17	R3885808
Bacteriological Tests							
E. Coli	<10		10	CFU/g dwt	09-NOV-17	10-NOV-17	R3888870
Metals							
Phosphorus (P)	697		50	ug/g	16-NOV-17	16-NOV-17	R3886859
Aggregate Organics							
Oil and Grease, Total	<500		500	mg/kg	15-NOV-17	15-NOV-17	R3886167
L2019990-6 T6 Sampled By: S. SCOTT on 07-NOV-17 @ 14:55 Matrix: SOIL							
Physical Tests							
Density	1270		10	kg/m3		14-NOV-17	R3884938
% Moisture	63.2		0.10	%	13-NOV-17	14-NOV-17	R3884071
Particle Size							
% >75um	41.6		1.0	%	16-NOV-17	17-NOV-17	R3886974
Metals							
Antimony (Sb)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Arsenic (As)	3.7		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Barium (Ba)	144		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-6 T6 Sampled By: S. SCOTT on 07-NOV-17 @ 14:55 Matrix: SOIL							
Metals							
Beryllium (Be)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886859
Boron (B)	6.7		5.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Boron (B), Hot Water Ext.	0.87		0.10	ug/g	16-NOV-17	16-NOV-17	R3886231
Cadmium (Cd)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886859
Chromium (Cr)	8.4		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Cobalt (Co)	4.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Copper (Cu)	12.6		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Lead (Pb)	9.6		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Mercury (Hg)	0.0462		0.0050	ug/g	16-NOV-17	16-NOV-17	R3886478
Molybdenum (Mo)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Nickel (Ni)	6.6		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Selenium (Se)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Silver (Ag)	<0.20		0.20	ug/g	16-NOV-17	16-NOV-17	R3886859
Thallium (Tl)	<0.50		0.50	ug/g	16-NOV-17	16-NOV-17	R3886859
Uranium (U)	<1.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Vanadium (V)	14.0		1.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Zinc (Zn)	52.0		5.0	ug/g	16-NOV-17	16-NOV-17	R3886859
Speciated Metals							
Chromium, Hexavalent	<0.40	DLHM	0.40	ug/g	13-NOV-17	14-NOV-17	R3885187
Volatile Organic Compounds							
Acetone	<1.0	DLHM	1.0	ug/g	10-NOV-17	13-NOV-17	R3883452
Benzene	<0.014	DLHM	0.014	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromodichloromethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromoform	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Bromomethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Carbon tetrachloride	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Chlorobenzene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Dibromochloromethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Chloroform	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dibromoethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichlorobenzene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,3-Dichlorobenzene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,4-Dichlorobenzene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Dichlorodifluoromethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1-Dichloroethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichloroethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1-Dichloroethylene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
cis-1,2-Dichloroethylene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
trans-1,2-Dichloroethylene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Methylene Chloride	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,2-Dichloropropane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-6 T6 Sampled By: S. SCOTT on 07-NOV-17 @ 14:55 Matrix: SOIL							
Volatile Organic Compounds							
cis-1,3-Dichloropropene	<0.060	DLHM	0.060	ug/g	10-NOV-17	13-NOV-17	R3883452
trans-1,3-Dichloropropene	<0.060	DLHM	0.060	ug/g	10-NOV-17	13-NOV-17	R3883452
1,3-Dichloropropene (cis & trans)	<0.085		0.085	ug/g		14-NOV-17	
Ethylbenzene	<0.036	DLHM	0.036	ug/g	10-NOV-17	13-NOV-17	R3883452
n-Hexane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Methyl Ethyl Ketone	<1.0	DLHM	1.0	ug/g	10-NOV-17	13-NOV-17	R3883452
Methyl Isobutyl Ketone	<1.0	DLHM	1.0	ug/g	10-NOV-17	13-NOV-17	R3883452
MTBE	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Styrene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,1,2-Tetrachloroethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,2,2-Tetrachloroethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Tetrachloroethylene	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Toluene	<0.16	DLHM	0.16	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,1-Trichloroethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
1,1,2-Trichloroethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Trichloroethylene	<0.020	DLHM	0.020	ug/g	10-NOV-17	13-NOV-17	R3883452
Trichlorofluoromethane	<0.10	DLHM	0.10	ug/g	10-NOV-17	13-NOV-17	R3883452
Vinyl chloride	<0.040	DLHM	0.040	ug/g	10-NOV-17	13-NOV-17	R3883452
o-Xylene	<0.040	DLHM	0.040	ug/g	10-NOV-17	13-NOV-17	R3883452
m+p-Xylenes	<0.060	DLHM	0.060	ug/g	10-NOV-17	13-NOV-17	R3883452
Xylenes (Total)	<0.072		0.072	ug/g		14-NOV-17	
Surrogate: 4-Bromofluorobenzene	78.1		50-140	%	10-NOV-17	13-NOV-17	R3883452
Surrogate: 1,4-Difluorobenzene	76.4		50-140	%	10-NOV-17	13-NOV-17	R3883452
Hydrocarbons							
F1 (C6-C10)	<10	DLHM	10	ug/g	10-NOV-17	13-NOV-17	R3883452
F1-BTEX	<10		10	ug/g		20-NOV-17	
F2 (C10-C16)	<20	DLHM	20	ug/g	14-NOV-17	17-NOV-17	R3887134
F2-Naphth	<20		20	ug/g		20-NOV-17	
F3 (C16-C34)	120	DLHM	100	ug/g	14-NOV-17	17-NOV-17	R3887134
F3-PAH	120		100	ug/g		20-NOV-17	
F4 (C34-C50)	<100	DLHM	100	ug/g	14-NOV-17	17-NOV-17	R3887134
Total Hydrocarbons (C6-C50)	<140		140	ug/g		20-NOV-17	
Chrom. to baseline at nC50	YES				14-NOV-17	17-NOV-17	R3887134
Surrogate: 2-Bromobenzotrifluoride	88.8		60-140	%	14-NOV-17	17-NOV-17	R3887134
Surrogate: 3,4-Dichlorotoluene	69.3		60-140	%	10-NOV-17	13-NOV-17	R3883452
Polycyclic Aromatic Hydrocarbons							
1+2-Methylnaphthalenes	<0.17		0.17	ug/g		16-NOV-17	
Semi-Volatile Organics							
Acenaphthene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Acenaphthylene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Anthracene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(a)anthracene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-6 T6 Sampled By: S. SCOTT on 07-NOV-17 @ 14:55 Matrix: SOIL							
Semi-Volatile Organics							
Benzo(a)pyrene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(b)fluoranthene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(ghi)perylene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Benzo(k)fluoranthene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Biphenyl	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
4-Chloroaniline	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Bis(2-chloroethyl)ether	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Bis(2-chloroisopropyl)ether	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
2-Chlorophenol	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Chrysene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Dibenzo(a,h)anthracene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
3,3'-Dichlorobenzidine	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dichlorophenol	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Diethylphthalate	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Dimethylphthalate	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dimethylphenol	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dinitrophenol	<4.0	DLR	4.0	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4-Dinitrotoluene	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
2,6-Dinitrotoluene	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4+2,6-Dinitrotoluene	<0.57		0.57	ug/g		16-NOV-17	
Bis(2-ethylhexyl)phthalate	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Fluoranthene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Fluorene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Indeno(1,2,3-cd)pyrene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
1-Methylnaphthalene	<0.12	DLR	0.12	ug/g	13-NOV-17	16-NOV-17	R3886157
2-Methylnaphthalene	<0.12	DLR	0.12	ug/g	13-NOV-17	16-NOV-17	R3886157
Naphthalene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Pentachlorophenol	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Phenanthrene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
Phenol	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Pyrene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
1,2,4-Trichlorobenzene	<0.20	DLR	0.20	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4,5-Trichlorophenol	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
2,4,6-Trichlorophenol	<0.40	DLR	0.40	ug/g	13-NOV-17	16-NOV-17	R3886157
Surrogate: 2-Fluorobiphenyl	94.7		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: Nitrobenzene d5	91.4		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: Phenol d5	97.2		30-130	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: p-Terphenyl d14	92.7		50-140	%	13-NOV-17	16-NOV-17	R3886157
Surrogate: 2,4,6-Tribromophenol	81.9		50-140	%	13-NOV-17	16-NOV-17	R3886157
Organochlorine Pesticides							
Aldrin	<0.040	DLM	0.040	ug/g	10-NOV-17	20-NOV-17	R3887273

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-6 T6 Sampled By: S. SCOTT on 07-NOV-17 @ 14:55 Matrix: SOIL							
Organochlorine Pesticides							
gamma-hexachlorocyclohexane	<0.020	DLHM	0.020	ug/g	10-NOV-17	17-NOV-17	R3887273
a-chlordane	<0.010	DLHM	0.010	ug/g	10-NOV-17	17-NOV-17	R3887273
Chlordane (Total)	<0.014		0.014	ug/g		20-NOV-17	
g-chlordane	<0.010	DLHM	0.010	ug/g	10-NOV-17	17-NOV-17	R3887273
op-DDD	<0.010	DLHM	0.010	ug/g	10-NOV-17	17-NOV-17	R3887273
pp-DDD	<0.020	DLQ	0.020	ug/g	10-NOV-17	17-NOV-17	R3887273
Total DDD	<0.14		0.14	ug/g		20-NOV-17	
o,p-DDE	<0.0060	DLHM	0.0060	ug/g	10-NOV-17	17-NOV-17	R3887273
pp-DDE	<0.015	DLQ	0.015	ug/g	10-NOV-17	17-NOV-17	R3887273
Total DDE	<0.085		0.085	ug/g		20-NOV-17	
op-DDT	<0.10	DLM	0.10	ug/g	10-NOV-17	20-NOV-17	R3887273
pp-DDT	<0.10	DLM	0.10	ug/g	10-NOV-17	20-NOV-17	R3887273
Total DDT	<0.14		0.14	ug/g		20-NOV-17	
Dieldrin	<0.040	DLM	0.040	ug/g	10-NOV-17	20-NOV-17	R3887273
Endosulfan I	<0.040	DLHM	0.040	ug/g	10-NOV-17	17-NOV-17	R3887273
Endosulfan II	<0.040	DLHM	0.040	ug/g	10-NOV-17	17-NOV-17	R3887273
Endosulfan (Total)	<0.057		0.057	ug/g		20-NOV-17	
Endrin	<0.0060	DLHM	0.0060	ug/g	10-NOV-17	17-NOV-17	R3887273
Heptachlor	<0.40	DLM	0.40	ug/g	10-NOV-17	20-NOV-17	R3887273
Heptachlor Epoxide	<0.010	DLHM	0.010	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachlorobenzene	<0.020	DLHM	0.020	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachlorobutadiene	<0.020	DLHM	0.020	ug/g	10-NOV-17	17-NOV-17	R3887273
Hexachloroethane	<0.20	DLM	0.20	ug/g	10-NOV-17	20-NOV-17	R3887273
Methoxychlor	<0.40	DLM	0.40	ug/g	10-NOV-17	20-NOV-17	R3887273
Surrogate: 2-Fluorobiphenyl	84.2		50-140	%	10-NOV-17	17-NOV-17	R3887273
Surrogate: d14-Terphenyl	75.9		50-140	%	10-NOV-17	17-NOV-17	R3887273
L2019990-7 T7 Sampled By: S. SCOTT on 07-NOV-17 @ 15:21 Matrix: SOIL							
Physical Tests							
Density	1630		10	kg/m3		14-NOV-17	R3884938
% Moisture	15.0		0.10	%	14-NOV-17	14-NOV-17	R3885161
Total Solids	81.1		0.10	%	13-NOV-17	13-NOV-17	R3884637
Particle Size							
% >75um	98.7		1.0	%	16-NOV-17	17-NOV-17	R3886974
Leachable Anions & Nutrients							
Ammonia as N	21		10	mg/kg	10-NOV-17	13-NOV-17	R3884725
Total Kjeldahl Nitrogen	0.022		0.020	%	15-NOV-17	15-NOV-17	R3885839
Anions and Nutrients							
Nitrate and Nitrite as N	<1.4		1.4	mg/kg		16-NOV-17	
Nitrate-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478
Nitrite-N	<1.0		1.0	mg/kg	09-NOV-17	10-NOV-17	R3882478

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2019990-7 T7 Sampled By: S. SCOTT on 07-NOV-17 @ 15:21 Matrix: SOIL							
Anions and Nutrients							
Organic / Inorganic Carbon							
Fraction Organic Carbon	0.0028		0.0010	g/g	20-NOV-17	21-NOV-17	R3892250
Total Organic Carbon	0.28		0.10	%	20-NOV-17	21-NOV-17	R3892250
Plant Available Nutrients							
Available Nitrate-N	2.0		1.0	mg/kg	15-NOV-17	15-NOV-17	R3885754
Available Phosphate-P	<2.0		2.0	mg/kg	15-NOV-17	15-NOV-17	R3885808
Available Potassium	<20		20	mg/kg	15-NOV-17	15-NOV-17	R3885808
Bacteriological Tests							
E. Coli	<10		10	CFU/g dwt	09-NOV-17	10-NOV-17	R3888870
Metals							
Phosphorus (P)	291		50	ug/g	16-NOV-17	16-NOV-17	R3886859
Aggregate Organics							
Oil and Grease, Total	<500		500	mg/kg	15-NOV-17	15-NOV-17	R3886167

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Ammonia as N	MS-B	L2019990-1, -3, -5, -7

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLHM	Detection Limit Adjusted: Sample has High Moisture Content
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
DLR	Detection Limit Raised due to required dilution, limited sample amount, and/or high moisture content (soil samples)
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
625-511-WT	Soil	ABN-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil and sediment samples are dried by mixing with a desiccant prior to extraction. The extracts are dried, concentrated and exchanged into a solvent and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

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

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

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

CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

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

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

DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

DENSITY-CL	Soil	Density (Wt/Vol)	ASTM D 5057 - 90

A portion of sample is weighed in a container that is calibrated for volume. Density is reported as the mass per volume of sample.

DINITROTOL-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
EC-SOLID-MF-WT	Soil	E. coli on sludge or solid	SM 9222D

A 1g biosolid sample is transferred into buffered dilution water blank. The sample is manually shaken and an aliquot of the sample is then filtered through the membrane filter. The filter is then placed on mFC-BCIG agar and incubated at 44.5 – 0.2 ”C for 24 – 2 hours. Method ID: WT-TM-1200. Results are reported on a dry weight basis. Moisture is required.

ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

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

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and

Reference Information

the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

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

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

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

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS
Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1
Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

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

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

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

MOISTURE-WT Soil % Moisture Gravimetric: Oven Dried

N-TOTKJ-COL-SK Soil Total Kjeldahl Nitrogen CSSS (2008) 22.2.3
The soil is digested with sulfuric acid in the presence of CuSO4 and K2SO4 catalysts. Ammonia in the soil extract is determined colrimetrically at 660 nm.

Calculate from NO2 + NO3 APHA 4110 B

Reference Information

N2N3-CALC-WT	Soil		
NH3-WT	Soil	Ammonia as N	EPA 350.1

Sample is distilled into a solution of boric acid and measured colorimetrically.

NO2-WT	Soil	Nitrite in Soil	EPA 300.0

5 grams of soil is mixed with 50 mL of distilled water for a minimum of 30 minutes. The extract is filtered and analyzed by ion chromatography.

NO3-AVAIL-SK	Soil	Available Nitrate-N	Method = Alberta Ag (1988)

Available Nitrate and Nitrite are extracted from the soil using a dilute calcium chloride solution.
Nitrate is quantitatively reduced to nitrite by passage of the sample through a copperized cadmium column. The nitrite (reduced nitrate plus original nitrite) is then determined by diazotizing with sulfanilamide followed by coupling with N-(1-naphthyl) ethylenediamine dihydrochloride. The resulting water soluble dye has a magenta color which is measured at colorimetrically at 520nm.

Reference:
Recommended Methods of Soil Analysis for Canadian Prairie Agricultural Soils. Alberta Agriculture (1988) p. 19 and 28

NO3-WT	Soil	Nitrate in Soil (NO3-N)	EPA 300.0

5 grams of soil is mixed with 50 mL of distilled water for a minimum of 30 minutes. The extract is filtered and analyzed by ion chromatography.

OGG-TOT-WT	Soil	Oil and Grease, Total	APHA 5520 B

Sample is extracted with an acetone:hexane mixture and then evaporated and the resulting residue is weighed to determine the total oil and grease.

PEST-OC-511-LOW-WT	Soil	R153 T1 OCPesticides in Sediment	SW846 8270

Samples are extracted using a mechanical shaker with solvent and then a portion is analyzed by GC/MS.

PO4/K-AVAIL-SK	Soil	Plant Available Phosphorus and Potassium	Comm. Soil Sci. Plant Anal, 25 (5&6)

Plant available phosphorus and potassium are extracted from the soil usng Modified Kelowna solution. Phosphorous in the soil extract is determined colorimetrically at 880 nm, while potassiumis determined by flame emission at 770 nm.

PSA-75UM-SIEVE-WT	Soil	% Particles>75um (Coarse/Fine)	ASTM D422-63-HYDROMETER/SIEVE

An air-dried sample is reduced to < 2 mm size and mixed with a dispersing agent (Calgon solution). The sample is washed through a 200 mesh (75 µm) sieve. The retained mass of sample is used to determine % sand fraction. If the percentage of sand is >50%, the soil is considered to be coarse textured soil. If the percentage of sand is <50%, the soil is considered to be fine textured.

Reference: ASTM D422-63

SOLIDS-TS-WT	Soil	Total Solids on Solid Matrix	APHA 2540B

A well-mixed sample is evaporated in a weighed dish and dried to constant weight in an oven at 103 to 105°C. The increase in weight over that of the empty dish represents the total solids. Results are reported as the percentage of the total sample.

TOC-WT	Soil	TOC & FOC in Solids	CARTER 21.3.2

Soil is treated with excess acidic dichromate, which reacts with the organic carbon, oxidizing it to CO2. The residual dichromate is titrated with ferrous ammonium sulphate and TOC calculated by difference.

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

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

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

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

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Reference Information

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

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

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

Quality Control Report

Workorder: L2019990 Report Date: 22-NOV-17

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3886157								
WG2662508-4 DUP		**WG2662508-3**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-NOV-17
1,2,4-Trichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
2-Chlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-NOV-17
2,4-Dichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
2,4-Dimethylphenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
2,4-Dinitrophenol		<1.0	<1.0	RPD-NA	ug/g	N/A	40	16-NOV-17
2,4-Dinitrotoluene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
2,4,5-Trichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
2,4,6-Trichlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
2,6-Dinitrotoluene		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
3,3'-Dichlorobenzidine		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
4-Chloroaniline		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Benzo(ghi)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Biphenyl		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Bis(2-chloroethyl)ether		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Bis(2-chloroisopropyl)ether		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Bis(2-ethylhexyl)phthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Dibenzo(a,h)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Diethylphthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Dimethylphthalate		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Naphthalene		<0.050	<0.050		ug/g			16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3886157								
WG2662508-4 DUP		**WG2662508-3**						
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Pentachlorophenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
Phenol		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-NOV-17
WG2662508-2 LCS								
1-Methylnaphthalene			97.5		%		50-140	16-NOV-17
1,2,4-Trichlorobenzene			88.4		%		50-140	16-NOV-17
2-Chlorophenol			94.5		%		50-140	16-NOV-17
2-Methylnaphthalene			87.0		%		50-140	16-NOV-17
2,4-Dichlorophenol			92.0		%		50-140	16-NOV-17
2,4-Dimethylphenol			95.2		%		30-130	16-NOV-17
2,4-Dinitrophenol			77.3		%		30-130	16-NOV-17
2,4-Dinitrotoluene			96.2		%		50-140	16-NOV-17
2,4,5-Trichlorophenol			89.2		%		50-140	16-NOV-17
2,4,6-Trichlorophenol			93.6		%		50-140	16-NOV-17
2,6-Dinitrotoluene			92.6		%		50-140	16-NOV-17
3,3'-Dichlorobenzidine			74.0		%		30-130	16-NOV-17
4-Chloroaniline			82.7		%		30-130	16-NOV-17
Acenaphthene			86.0		%		50-140	16-NOV-17
Acenaphthylene			91.5		%		50-140	16-NOV-17
Anthracene			89.1		%		50-140	16-NOV-17
Benzo(a)anthracene			92.5		%		50-140	16-NOV-17
Benzo(a)pyrene			93.0		%		50-140	16-NOV-17
Benzo(b)fluoranthene			91.0		%		50-140	16-NOV-17
Benzo(ghi)perylene			96.6		%		50-140	16-NOV-17
Benzo(k)fluoranthene			90.1		%		50-140	16-NOV-17
Biphenyl			92.6		%		50-140	16-NOV-17
Bis(2-chloroethyl)ether			93.7		%		50-140	16-NOV-17
Bis(2-chloroisopropyl)ether			90.1		%		50-140	16-NOV-17
Bis(2-ethylhexyl)phthalate			86.8		%		50-140	16-NOV-17
Chrysene			89.3		%		50-140	16-NOV-17
Dibenzo(a,h)anthracene			94.2		%		50-140	16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3886157								
WG2662508-2 LCS								
Diethylphthalate			83.3		%		50-140	16-NOV-17
Dimethylphthalate			83.8		%		50-140	16-NOV-17
Fluoranthene			84.0		%		50-140	16-NOV-17
Fluorene			88.4		%		50-140	16-NOV-17
Indeno(1,2,3-cd)pyrene			99.8		%		50-140	16-NOV-17
Naphthalene			89.5		%		50-140	16-NOV-17
Pentachlorophenol			81.9		%		50-140	16-NOV-17
Phenanthrene			89.0		%		50-140	16-NOV-17
Phenol			95.6		%		30-130	16-NOV-17
Pyrene			84.7		%		50-140	16-NOV-17
WG2662508-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	16-NOV-17
1,2,4-Trichlorobenzene			<0.050		ug/g		0.05	16-NOV-17
2-Chlorophenol			<0.10		ug/g		0.1	16-NOV-17
2-Methylnaphthalene			<0.030		ug/g		0.03	16-NOV-17
2,4-Dichlorophenol			<0.10		ug/g		0.1	16-NOV-17
2,4-Dimethylphenol			<0.10		ug/g		0.1	16-NOV-17
2,4-Dinitrophenol			<1.0		ug/g		1	16-NOV-17
2,4-Dinitrotoluene			<0.10		ug/g		0.1	16-NOV-17
2,4,5-Trichlorophenol			<0.10		ug/g		0.1	16-NOV-17
2,4,6-Trichlorophenol			<0.10		ug/g		0.1	16-NOV-17
2,6-Dinitrotoluene			<0.10		ug/g		0.1	16-NOV-17
3,3'-Dichlorobenzidine			<0.10		ug/g		0.1	16-NOV-17
4-Chloroaniline			<0.10		ug/g		0.1	16-NOV-17
Acenaphthene			<0.050		ug/g		0.05	16-NOV-17
Acenaphthylene			<0.050		ug/g		0.05	16-NOV-17
Anthracene			<0.050		ug/g		0.05	16-NOV-17
Benzo(a)anthracene			<0.050		ug/g		0.05	16-NOV-17
Benzo(a)pyrene			<0.050		ug/g		0.05	16-NOV-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	16-NOV-17
Benzo(ghi)perylene			<0.050		ug/g		0.05	16-NOV-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	16-NOV-17
Biphenyl			<0.050		ug/g		0.05	16-NOV-17
Bis(2-chloroethyl)ether			<0.10		ug/g		0.1	16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch	**R3886157**							
WG2662508-1	**MB**							
Bis(2-chloroisopropyl)ether			<0.10		ug/g		0.1	16-NOV-17
Bis(2-ethylhexyl)phthalate			<0.10		ug/g		0.1	16-NOV-17
Chrysene			<0.050		ug/g		0.05	16-NOV-17
Dibenzo(a,h)anthracene			<0.050		ug/g		0.05	16-NOV-17
Diethylphthalate			<0.10		ug/g		0.1	16-NOV-17
Dimethylphthalate			<0.10		ug/g		0.1	16-NOV-17
Fluoranthene			<0.050		ug/g		0.05	16-NOV-17
Fluorene			<0.050		ug/g		0.05	16-NOV-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	16-NOV-17
Naphthalene			<0.050		ug/g		0.05	16-NOV-17
Pentachlorophenol			<0.10		ug/g		0.1	16-NOV-17
Phenanthrene			<0.050		ug/g		0.05	16-NOV-17
Phenol			<0.10		ug/g		0.1	16-NOV-17
Pyrene			<0.050		ug/g		0.05	16-NOV-17
Surrogate: 2-Fluorobiphenyl			72.6		%		50-140	16-NOV-17
Surrogate: 2,4,6-Tribromophenol			67.0		%		50-140	16-NOV-17
Surrogate: Nitrobenzene d5			86.2		%		50-140	16-NOV-17
Surrogate: p-Terphenyl d14			89.4		%		50-140	16-NOV-17
Surrogate: Phenol d5			90.0		%		30-130	16-NOV-17
WG2662508-5	**MS**	**WG2662508-3**						
1-Methylnaphthalene			101.1		%		50-140	16-NOV-17
1,2,4-Trichlorobenzene			91.6		%		50-140	16-NOV-17
2-Chlorophenol			96.3		%		50-140	16-NOV-17
2-Methylnaphthalene			89.7		%		50-140	16-NOV-17
2,4-Dichlorophenol			96.9		%		50-140	16-NOV-17
2,4-Dimethylphenol			101.2		%		30-150	16-NOV-17
2,4-Dinitrophenol			65.1		%		30-150	16-NOV-17
2,4-Dinitrotoluene			99.4		%		50-140	16-NOV-17
2,4,5-Trichlorophenol			94.3		%		50-140	16-NOV-17
2,4,6-Trichlorophenol			97.8		%		50-140	16-NOV-17
2,6-Dinitrotoluene			94.5		%		50-140	16-NOV-17
3,3'-Dichlorobenzidine			86.0		%		30-130	16-NOV-17
4-Chloroaniline			84.5		%		30-130	16-NOV-17
Acenaphthene			89.2		%		50-140	16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
625-511-WT	**Soil**							
Batch R3886157								
WG2662508-5 MS		**WG2662508-3**						
Acenaphthylene			95.9		%		50-140	16-NOV-17
Anthracene			93.2		%		50-140	16-NOV-17
Benzo(a)anthracene			99.3		%		50-140	16-NOV-17
Benzo(a)pyrene			98.3		%		50-140	16-NOV-17
Benzo(b)fluoranthene			97.3		%		50-140	16-NOV-17
Benzo(ghi)perylene			96.9		%		50-140	16-NOV-17
Benzo(k)fluoranthene			90.3		%		50-140	16-NOV-17
Biphenyl			95.2		%		50-140	16-NOV-17
Bis(2-chloroethyl)ether			96.6		%		50-140	16-NOV-17
Bis(2-chloroisopropyl)ether			93.5		%		50-140	16-NOV-17
Bis(2-ethylhexyl)phthalate			88.8		%		50-140	16-NOV-17
Chrysene			93.5		%		50-140	16-NOV-17
Dibenzo(a,h)anthracene			96.3		%		50-140	16-NOV-17
Diethylphthalate			85.9		%		50-140	16-NOV-17
Dimethylphthalate			87.0		%		50-140	16-NOV-17
Fluoranthene			86.4		%		50-140	16-NOV-17
Fluorene			92.1		%		50-140	16-NOV-17
Indeno(1,2,3-cd)pyrene			99.5		%		50-140	16-NOV-17
Naphthalene			92.3		%		50-140	16-NOV-17
Pentachlorophenol			79.1		%		50-140	16-NOV-17
Phenanthrene			92.9		%		50-140	16-NOV-17
Phenol			96.7		%		30-130	16-NOV-17
Pyrene			86.8		%		50-140	16-NOV-17
B-HWS-R511-WT	**Soil**							
Batch R3886231								
WG2664762-4 DUP		**L2021526-2**						
Boron (B), Hot Water Ext.		0.48	0.48		ug/g	0.6	30	16-NOV-17
WG2664762-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			125.3		%		70-130	16-NOV-17
WG2664762-3 LCS								
Boron (B), Hot Water Ext.			99.4		%		70-130	16-NOV-17
WG2664762-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	16-NOV-17
CR-CR6-IC-WT	**Soil**							

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	**Soil**							
Batch R3885187								
WG2662574-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			80.9		%		70-130	14-NOV-17
WG2662574-4 DUP		**L2020159-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	14-NOV-17
WG2662574-2 LCS								
Chromium, Hexavalent			93.0		%		80-120	14-NOV-17
WG2662574-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	14-NOV-17
DENSITY-CL	**Soil**							
Batch R3884938								
WG2663511-2 DUP		**L2018295-1**						
Density		1570	1580		kg/m3	0.6	20	14-NOV-17
WG2663511-1 IRM		**DI_H2O**						
EC-SOLID-MF-WT	**Soil**							
Batch R3888870								
WG2660273-4 DUP		**L2019990-5**						
E. Coli		<10	<10	RPD-NA	CFU/g dwt	N/A	75	10-NOV-17
WG2660273-1 MB								
E. Coli			<10		CFU/g dwt		10	10-NOV-17
F1-HS-511-WT	**Soil**							
Batch R3883452								
WG2661265-4 DUP		**WG2661265-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	13-NOV-17
WG2661265-2 LCS								
F1 (C6-C10)			99.9		%		80-120	13-NOV-17
WG2661265-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	13-NOV-17
Surrogate: 3,4-Dichlorotoluene			116.0		%		60-140	13-NOV-17
WG2661265-7 MS		**WG2661265-6**						
F1 (C6-C10)			104.3		%		60-140	13-NOV-17
F2-F4-511-WT	**Soil**							
Batch R3887134								
WG2662908-3 CRM		**ALS PHC2 IRM**						
F2 (C10-C16)			106.2		%		70-130	16-NOV-17
F3 (C16-C34)			113.6		%		70-130	16-NOV-17
F4 (C34-C50)			110.5		%		70-130	16-NOV-17
WG2662908-5 DUP		**WG2662908-4**						

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3887134								
WG2662908-5 DUP		**WG2662908-4**						
F2 (C10-C16)		14	16		ug/g	11	30	17-NOV-17
F3 (C16-C34)		61	66		ug/g	7.4	30	17-NOV-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	17-NOV-17
WG2662908-2 LCS								
F2 (C10-C16)			97.6		%		80-120	16-NOV-17
F3 (C16-C34)			101.0		%		80-120	16-NOV-17
F4 (C34-C50)			90.8		%		80-120	16-NOV-17
WG2662908-1 MB								
F2 (C10-C16)			<10		ug/g		10	16-NOV-17
F3 (C16-C34)			<50		ug/g		50	16-NOV-17
F4 (C34-C50)			<50		ug/g		50	16-NOV-17
Surrogate: 2-Bromobenzotrifluoride			92.0		%		60-140	16-NOV-17
HG-200.2-CVAA-WT	**Soil**							
Batch R3886476								
WG2664725-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			103.7		%		70-130	16-NOV-17
WG2664725-6 DUP		**WG2664725-5**						
Mercury (Hg)		0.0140	0.0143		ug/g	1.7	40	16-NOV-17
WG2664725-3 LCS								
Mercury (Hg)			106.0		%		80-120	16-NOV-17
WG2664725-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	16-NOV-17
Batch R3886478								
WG2664722-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			103.5		%		70-130	16-NOV-17
WG2664722-6 DUP		**WG2664722-5**						
Mercury (Hg)		0.0302	0.0327		ug/g	8.2	40	16-NOV-17
WG2664722-3 LCS								
Mercury (Hg)			105.0		%		80-120	16-NOV-17
WG2664722-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	16-NOV-17
MET-200.2-CCMS-WT	**Soil**							
Batch R3886856								
WG2664725-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			100.5		%		70-130	16-NOV-17
Arsenic (As)			100.0		%		70-130	

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3886856								
WG2664725-2 CRM		**WT-CANMET-TILL1**						
Arsenic (As)			100.0		%		70-130	16-NOV-17
Barium (Ba)			103.9		%		70-130	16-NOV-17
Beryllium (Be)			96.6		%		70-130	16-NOV-17
Boron (B)			3.1		mg/kg		0-8.2	16-NOV-17
Cadmium (Cd)			99.9		%		70-130	16-NOV-17
Chromium (Cr)			101.6		%		70-130	16-NOV-17
Cobalt (Co)			99.0		%		70-130	16-NOV-17
Copper (Cu)			98.5		%		70-130	16-NOV-17
Lead (Pb)			100.8		%		70-130	16-NOV-17
Molybdenum (Mo)			97.9		%		70-130	16-NOV-17
Nickel (Ni)			100.4		%		70-130	16-NOV-17
Phosphorus (P)			95.6		%		70-130	16-NOV-17
Selenium (Se)			0.29		mg/kg		0.11-0.51	16-NOV-17
Silver (Ag)			0.23		mg/kg		0.13-0.33	16-NOV-17
Thallium (Tl)			0.122		mg/kg		0.077-0.18	16-NOV-17
Uranium (U)			106.7		%		70-130	16-NOV-17
Vanadium (V)			101.4		%		70-130	16-NOV-17
Zinc (Zn)			97.3		%		70-130	16-NOV-17
WG2664725-6 DUP		**WG2664725-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	16-NOV-17
Arsenic (As)		2.02	2.04		ug/g	0.7	30	16-NOV-17
Barium (Ba)		39.3	40.3		ug/g	2.5	40	16-NOV-17
Beryllium (Be)		0.36	0.34		ug/g	4.7	30	16-NOV-17
Boron (B)		7.4	7.4		ug/g	1.2	30	16-NOV-17
Cadmium (Cd)		0.101	0.103		ug/g	1.4	30	16-NOV-17
Chromium (Cr)		12.2	12.5		ug/g	2.7	30	16-NOV-17
Cobalt (Co)		4.30	4.49		ug/g	4.3	30	16-NOV-17
Copper (Cu)		9.20	9.58		ug/g	4.0	30	16-NOV-17
Lead (Pb)		7.03	7.04		ug/g	0.2	40	16-NOV-17
Molybdenum (Mo)		0.19	0.18		ug/g	3.8	40	16-NOV-17
Nickel (Ni)		8.77	9.04		ug/g	3.1	30	16-NOV-17
Phosphorus (P)		524	560		ug/g	6.6	30	16-NOV-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3886856								
WG2664725-6 DUP		**WG2664725-5**						
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Thallium (Tl)		0.071	0.074		ug/g	4.8	30	16-NOV-17
Uranium (U)		0.446	0.428		ug/g	4.1	30	16-NOV-17
Vanadium (V)		21.4	22.2		ug/g	3.4	30	16-NOV-17
Zinc (Zn)		37.1	38.2		ug/g	2.8	30	16-NOV-17
WG2664725-4 LCS								
Antimony (Sb)			101.4		%		80-120	16-NOV-17
Arsenic (As)			96.1		%		80-120	16-NOV-17
Barium (Ba)			99.0		%		80-120	16-NOV-17
Beryllium (Be)			94.9		%		80-120	16-NOV-17
Boron (B)			91.6		%		80-120	16-NOV-17
Cadmium (Cd)			98.4		%		80-120	16-NOV-17
Chromium (Cr)			96.4		%		80-120	16-NOV-17
Cobalt (Co)			94.8		%		80-120	16-NOV-17
Copper (Cu)			93.7		%		80-120	16-NOV-17
Lead (Pb)			99.5		%		80-120	16-NOV-17
Molybdenum (Mo)			96.6		%		80-120	16-NOV-17
Nickel (Ni)			95.0		%		80-120	16-NOV-17
Phosphorus (P)			87.3		%		80-120	16-NOV-17
Selenium (Se)			94.7		%		80-120	16-NOV-17
Silver (Ag)			97.8		%		80-120	16-NOV-17
Thallium (Tl)			98.8		%		80-120	16-NOV-17
Uranium (U)			98.8		%		80-120	16-NOV-17
Vanadium (V)			97.8		%		80-120	16-NOV-17
Zinc (Zn)			87.4		%		80-120	16-NOV-17
WG2664725-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	16-NOV-17
Arsenic (As)			<0.10		mg/kg		0.1	16-NOV-17
Barium (Ba)			<0.50		mg/kg		0.5	16-NOV-17
Beryllium (Be)			<0.10		mg/kg		0.1	16-NOV-17
Boron (B)			<5.0		mg/kg		5	16-NOV-17
Cadmium (Cd)			<0.020		mg/kg		0.02	16-NOV-17
Chromium (Cr)			<0.50		mg/kg		0.5	16-NOV-17
Cobalt (Co)			<0.10		mg/kg		0.1	16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3886856								
WG2664725-1 MB								
Copper (Cu)			<0.50		mg/kg		0.5	16-NOV-17
Lead (Pb)			<0.50		mg/kg		0.5	16-NOV-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	16-NOV-17
Nickel (Ni)			<0.50		mg/kg		0.5	16-NOV-17
Phosphorus (P)			<50		mg/kg		50	16-NOV-17
Selenium (Se)			<0.20		mg/kg		0.2	16-NOV-17
Silver (Ag)			<0.10		mg/kg		0.1	16-NOV-17
Thallium (Tl)			<0.050		mg/kg		0.05	16-NOV-17
Uranium (U)			<0.050		mg/kg		0.05	16-NOV-17
Vanadium (V)			<0.20		mg/kg		0.2	16-NOV-17
Zinc (Zn)			<2.0		mg/kg		2	16-NOV-17
Batch R3886859								
WG2664722-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			99.1		%		70-130	16-NOV-17
Arsenic (As)			99.2		%		70-130	16-NOV-17
Barium (Ba)			100.2		%		70-130	16-NOV-17
Beryllium (Be)			93.2		%		70-130	16-NOV-17
Boron (B)			2.8		mg/kg		0-8.2	16-NOV-17
Cadmium (Cd)			93.5		%		70-130	16-NOV-17
Chromium (Cr)			93.4		%		70-130	16-NOV-17
Cobalt (Co)			94.1		%		70-130	16-NOV-17
Copper (Cu)			96.3		%		70-130	16-NOV-17
Lead (Pb)			100.3		%		70-130	16-NOV-17
Molybdenum (Mo)			91.8		%		70-130	16-NOV-17
Nickel (Ni)			93.8		%		70-130	16-NOV-17
Phosphorus (P)			97.9		%		70-130	16-NOV-17
Selenium (Se)			0.28		mg/kg		0.11-0.51	16-NOV-17
Silver (Ag)			0.23		mg/kg		0.13-0.33	16-NOV-17
Thallium (Tl)			0.121		mg/kg		0.077-0.18	16-NOV-17
Uranium (U)			96.0		%		70-130	16-NOV-17
Vanadium (V)			93.8		%		70-130	16-NOV-17
Zinc (Zn)			93.5		%		70-130	16-NOV-17
WG2664722-6 DUP		**WG2664722-5**						
Antimony (Sb)		0.17	0.16		ug/g	6.6	30	16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3886859								
WG2664722-6 DUP		**WG2664722-5**						
Arsenic (As)		5.50	5.56		ug/g	1.1	30	16-NOV-17
Barium (Ba)		88.2	86.6		ug/g	1.8	40	16-NOV-17
Beryllium (Be)		0.37	0.36		ug/g	1.2	30	16-NOV-17
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	16-NOV-17
Cadmium (Cd)		0.141	0.150		ug/g	6.6	30	16-NOV-17
Chromium (Cr)		14.1	14.7		ug/g	3.8	30	16-NOV-17
Cobalt (Co)		4.55	4.72		ug/g	3.6	30	16-NOV-17
Copper (Cu)		28.4	29.0		ug/g	2.3	30	16-NOV-17
Lead (Pb)		11.1	10.9		ug/g	1.0	40	16-NOV-17
Molybdenum (Mo)		0.47	0.39		ug/g	18	40	16-NOV-17
Nickel (Ni)		9.74	10.0		ug/g	2.9	30	16-NOV-17
Phosphorus (P)		593	576		ug/g	2.8	30	16-NOV-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	16-NOV-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-NOV-17
Thallium (Tl)		0.096	0.093		ug/g	3.3	30	16-NOV-17
Uranium (U)		0.316	0.325		ug/g	2.6	30	16-NOV-17
Vanadium (V)		23.4	25.3		ug/g	7.6	30	16-NOV-17
Zinc (Zn)		45.1	47.6		ug/g	5.4	30	16-NOV-17
WG2664722-4 LCS								
Antimony (Sb)			101.7		%		80-120	16-NOV-17
Arsenic (As)			100.6		%		80-120	16-NOV-17
Barium (Ba)			100.7		%		80-120	16-NOV-17
Beryllium (Be)			97.7		%		80-120	16-NOV-17
Boron (B)			91.1		%		80-120	16-NOV-17
Cadmium (Cd)			101.8		%		80-120	16-NOV-17
Chromium (Cr)			98.6		%		80-120	16-NOV-17
Cobalt (Co)			96.4		%		80-120	16-NOV-17
Copper (Cu)			95.8		%		80-120	16-NOV-17
Lead (Pb)			103.7		%		80-120	16-NOV-17
Molybdenum (Mo)			99.9		%		80-120	16-NOV-17
Nickel (Ni)			97.5		%		80-120	16-NOV-17
Phosphorus (P)			102.5		%		80-120	16-NOV-17
Selenium (Se)			99.3		%		80-120	16-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3886859								
WG2664722-4 LCS								
Silver (Ag)			96.9		%		80-120	16-NOV-17
Thallium (Tl)			103.7		%		80-120	16-NOV-17
Uranium (U)			101.2		%		80-120	16-NOV-17
Vanadium (V)			100.2		%		80-120	16-NOV-17
Zinc (Zn)			92.2		%		80-120	16-NOV-17
WG2664722-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	16-NOV-17
Arsenic (As)			<0.10		mg/kg		0.1	16-NOV-17
Barium (Ba)			<0.50		mg/kg		0.5	16-NOV-17
Beryllium (Be)			<0.10		mg/kg		0.1	16-NOV-17
Boron (B)			<5.0		mg/kg		5	16-NOV-17
Cadmium (Cd)			<0.020		mg/kg		0.02	16-NOV-17
Chromium (Cr)			<0.50		mg/kg		0.5	16-NOV-17
Cobalt (Co)			<0.10		mg/kg		0.1	16-NOV-17
Copper (Cu)			<0.50		mg/kg		0.5	16-NOV-17
Lead (Pb)			<0.50		mg/kg		0.5	16-NOV-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	16-NOV-17
Nickel (Ni)			<0.50		mg/kg		0.5	16-NOV-17
Phosphorus (P)			<50		mg/kg		50	16-NOV-17
Selenium (Se)			<0.20		mg/kg		0.2	16-NOV-17
Silver (Ag)			<0.10		mg/kg		0.1	16-NOV-17
Thallium (Tl)			<0.050		mg/kg		0.05	16-NOV-17
Uranium (U)			<0.050		mg/kg		0.05	16-NOV-17
Vanadium (V)			<0.20		mg/kg		0.2	16-NOV-17
Zinc (Zn)			<2.0		mg/kg		2	16-NOV-17
MOISTURE-WT	**Soil**							
Batch R3882176								
WG2661276-3 DUP		**L2019990-1**						
% Moisture		17.7	17.8		%	0.5	20	10-NOV-17
WG2661276-2 LCS								
% Moisture			99.9		%		90-110	10-NOV-17
WG2661276-1 MB								
% Moisture			<0.10		%		0.1	10-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3884071								
WG2662725-3 DUP		**L2021278-1**						
% Moisture		19.5	19.8		%	1.6	20	14-NOV-17
WG2662725-2 LCS								
% Moisture			100.1		%		90-110	14-NOV-17
WG2662725-1 MB								
% Moisture			<0.10		%		0.1	14-NOV-17
Batch R3885161								
WG2663630-3 DUP		**L2021526-4**						
% Moisture		13.3	13.2		%	0.6	20	14-NOV-17
WG2663630-2 LCS								
% Moisture			99.6		%		90-110	14-NOV-17
WG2663630-1 MB								
% Moisture			<0.10		%		0.1	14-NOV-17
N-TOTKJ-COL-SK	**Soil**							
Batch R3885839								
WG2664014-1 DUP		**L2019990-7**						
Total Kjeldahl Nitrogen		0.022	0.020		%	9.1	20	15-NOV-17
WG2664014-2 IRM		**08-109_SOIL**						
Total Kjeldahl Nitrogen			100.1		%		80-120	15-NOV-17
WG2664014-3 MB								
Total Kjeldahl Nitrogen			<0.020		%		0.02	15-NOV-17
NH3-WT	**Soil**							
Batch R3884725								
WG2661259-3 DUP		**L2020052-1**						
Ammonia as N		226	226		mg/kg	0.2	20	13-NOV-17
WG2661259-2 LCS								
Ammonia as N			121.7		%		70-130	13-NOV-17
WG2661259-1 MB								
Ammonia as N			<10		mg/kg		10	13-NOV-17
WG2661259-4 MS		**L2020052-1**						
Ammonia as N			N/A	MS-B	%		-	13-NOV-17
NO2-WT	**Soil**							
Batch R3882478								
WG2660205-2 LCS								
Nitrite-N			99.0		%		80-120	10-NOV-17
WG2660205-1 MB								
Nitrite-N			<1.0		mg/kg		1	10-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-AVAIL-SK	**Soil**							
Batch R3885754								
WG2663550-1 DUP		**L2020978-1**						
Available Nitrate-N		11.8	13.0		mg/kg	9.3	30	15-NOV-17
WG2663550-3 IRM		**SAL814**						
Available Nitrate-N			111.0		%		70-130	15-NOV-17
WG2663550-2 MB								
Available Nitrate-N			<1.0		mg/kg		1	15-NOV-17
NO3-WT	**Soil**							
Batch R3882478								
WG2660205-3 CRM		**AN-CRM-WT**						
Nitrate-N			104.8		%		60-140	10-NOV-17
WG2660205-2 LCS								
Nitrate-N			100.6		%		80-120	10-NOV-17
WG2660205-1 MB								
Nitrate-N			<1.0		mg/kg		1	10-NOV-17
OGG-TOT-WT	**Soil**							
Batch R3886167								
WG2664750-9 DUP		**WG2664750-8**						
Oil and Grease, Total		<500	<500	RPD-NA	mg/kg	N/A	40	15-NOV-17
WG2664750-7 LCS								
Oil and Grease, Total			90.8		%		70-130	15-NOV-17
WG2664750-6 MB								
Oil and Grease, Total			<500		mg/kg		500	15-NOV-17
WG2664750-10 MS		**WG2664750-8**						
Oil and Grease, Total			85.8		%		50-150	15-NOV-17
PEST-OC-511-LOW-WT	**Soil**							
Batch R3887273								
WG2661460-4 DUP		**WG2661460-3**						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	50	20-NOV-17
a-chlordane		<0.0050	<0.0050	RPD-NA	ug/g	N/A	50	17-NOV-17
g-chlordane		<0.0050	<0.0050	RPD-NA	ug/g	N/A	50	17-NOV-17
op-DDD		<0.0050	<0.0050	RPD-NA	ug/g	N/A	40	17-NOV-17
pp-DDD		0.0129	0.0132		ug/g	2.5	50	17-NOV-17
o,p-DDE		<0.0030	<0.0030	RPD-NA	ug/g	N/A	50	17-NOV-17
pp-DDE		0.0412	0.0460		ug/g	11	50	17-NOV-17
op-DDT		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-NOV-17
pp-DDT		<0.050	<0.050	RPD-NA	ug/g	N/A	50	20-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-LOW-WT	**Soil**							
Batch	**R3887273**							
WG2661460-4	**DUP**	**WG2661460-3**						
Dieldrin		<0.030	<0.030	RPD-NA	ug/g	N/A	50	20-NOV-17
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	50	17-NOV-17
Endosulfan II		<0.20	<0.20	RPD-NA	ug/g	N/A	50	20-NOV-17
Endrin		<0.030	<0.030	RPD-NA	ug/g	N/A	50	20-NOV-17
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	50	17-NOV-17
Heptachlor		<0.20	<0.20	RPD-NA	ug/g	N/A	50	20-NOV-17
Heptachlor Epoxide		<0.0050	<0.0050	RPD-NA	ug/g	N/A	50	17-NOV-17
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	50	17-NOV-17
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	50	17-NOV-17
Hexachloroethane		<0.10	<0.10	RPD-NA	ug/g	N/A	50	20-NOV-17
Methoxychlor		<0.20	<0.20	RPD-NA	ug/g	N/A	50	20-NOV-17
WG2661460-2	**LCS**							
Aldrin			99.3		%		50-140	17-NOV-17
a-chlordane			91.4		%		50-140	17-NOV-17
g-chlordane			102.7		%		50-140	17-NOV-17
op-DDD			96.9		%		50-140	17-NOV-17
pp-DDD			82.8		%		50-140	17-NOV-17
o,p-DDE			87.4		%		50-140	17-NOV-17
pp-DDE			93.1		%		50-140	17-NOV-17
op-DDT			91.9		%		50-140	20-NOV-17
pp-DDT			82.3		%		50-140	20-NOV-17
Dieldrin			87.8		%		50-140	17-NOV-17
Endosulfan I			103.5		%		40-140	17-NOV-17
Endosulfan II			79.4		%		40-140	17-NOV-17
Endrin			64.9		%		50-140	17-NOV-17
gamma-hexachlorocyclohexane			91.9		%		50-140	17-NOV-17
Heptachlor			92.1		%		50-140	20-NOV-17
Heptachlor Epoxide			105.0		%		50-140	17-NOV-17
Hexachlorobenzene			101.0		%		50-140	17-NOV-17
Hexachlorobutadiene			89.0		%		50-140	17-NOV-17
Hexachloroethane			109.1		%		50-140	20-NOV-17
Methoxychlor			75.5		%		50-140	20-NOV-17
WG2661460-1	**MB**							
Aldrin			<0.0020		ug/g		0.002	

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-LOW-WT	**Soil**							
Batch	**R3887273**							
WG2661460-1	**MB**							
Aldrin			<0.0020		ug/g		0.002	17-NOV-17
a-chlordane			<0.0050		ug/g		0.005	17-NOV-17
g-chlordane			<0.0050		ug/g		0.005	17-NOV-17
op-DDD			<0.0050		ug/g		0.005	17-NOV-17
pp-DDD			<0.0050		ug/g		0.005	17-NOV-17
o,p-DDE			<0.0030		ug/g		0.003	17-NOV-17
pp-DDE			<0.0030		ug/g		0.003	17-NOV-17
op-DDT			<0.0050		ug/g		0.005	20-NOV-17
pp-DDT			<0.0050		ug/g		0.005	20-NOV-17
Dieldrin			<0.0020		ug/g		0.002	17-NOV-17
Endosulfan I			<0.020		ug/g		0.02	17-NOV-17
Endosulfan II			<0.020		ug/g		0.02	17-NOV-17
Endrin			<0.0030		ug/g		0.003	17-NOV-17
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	17-NOV-17
Heptachlor			<0.020		ug/g		0.02	20-NOV-17
Heptachlor Epoxide			<0.0050		ug/g		0.005	17-NOV-17
Hexachlorobenzene			<0.010		ug/g		0.01	17-NOV-17
Hexachlorobutadiene			<0.010		ug/g		0.01	17-NOV-17
Hexachloroethane			<0.010		ug/g		0.01	20-NOV-17
Methoxychlor			<0.020		ug/g		0.02	20-NOV-17
Surrogate: 2-Fluorobiphenyl			76.5		%		50-140	17-NOV-17
Surrogate: d14-Terphenyl			74.1		%		50-140	17-NOV-17
WG2661460-5	**MS**	**WG2661460-3**						
Aldrin			89.0		%		50-150	17-NOV-17
a-chlordane			113.2		%		50-150	17-NOV-17
g-chlordane			123.0		%		50-150	17-NOV-17
op-DDD			113.8		%		50-150	17-NOV-17
pp-DDD			124.1		%		50-150	17-NOV-17
o,p-DDE			86.3		%		50-150	17-NOV-17
pp-DDE			117.9		%		50-150	17-NOV-17
op-DDT			58.8		%		50-150	20-NOV-17
pp-DDT			51.7		%		50-150	20-NOV-17
Dieldrin			106.9		%		50-150	17-NOV-17
Endosulfan I			132.2		%		50-150	17-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-LOW-WT	**Soil**							
Batch R3887273								
WG2661460-5 MS		**WG2661460-3**						
Endosulfan II			109.2		%		50-150	17-NOV-17
Endrin			102.9		%		50-150	20-NOV-17
gamma-hexachlorocyclohexane			104.0		%		50-150	17-NOV-17
Heptachlor			104.9		%		50-150	20-NOV-17
Heptachlor Epoxide			140.7		%		50-150	17-NOV-17
Hexachlorobenzene			98.6		%		50-140	17-NOV-17
Hexachlorobutadiene			74.2		%		50-140	17-NOV-17
Hexachloroethane			88.2		%		50-140	20-NOV-17
Methoxychlor			63.5		%		50-150	20-NOV-17
PO4/K-AVAIL-SK	**Soil**							
Batch R3885808								
WG2663269-1 DUP		**L2012031-5**						
Available Phosphate-P		19.6	19.8		mg/kg	0.9	30	15-NOV-17
Available Potassium		98	105		mg/kg	7.3	30	15-NOV-17
WG2663269-3 IRM		**FARM2005**						
Available Phosphate-P			96.9		%		70-130	15-NOV-17
Available Potassium			84.8		%		70-130	15-NOV-17
WG2663269-2 MB								
Available Phosphate-P			<2.0		mg/kg		2	15-NOV-17
Available Potassium			<20		mg/kg		20	15-NOV-17
PSA-75UM-SIEVE-WT	**Soil**							
Batch R3886974								
WG2665508-1 DUP		**L2020700-6**						
% >75um		28.4	28.6	J	%	0.2	5	17-NOV-17
SOLIDS-TS-WT	**Soil**							
Batch R3884637								
WG2662615-3 DUP		**L2020252-3**						
Total Solids		2.07	2.08		%	0.6	20	13-NOV-17
WG2662615-2 LCS								
Total Solids			104.3		%		85-115	13-NOV-17
WG2662615-1 MB								
Total Solids			<0.10		%		0.1	13-NOV-17
TOC-WT	**Soil**							

Quality Control Report

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KITCHENER ON N2P 0A4
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TOC-WT	**Soil**							
Batch R3892250								
WG2667135-3 CRM		**WT-TOC-CRM**						
Total Organic Carbon			98.7		%		70-130	21-NOV-17
WG2667135-4 DUP		**L2019990-1**						
Total Organic Carbon		0.26	0.25		%	6.6	20	21-NOV-17
Fraction Organic Carbon		0.0026	0.0025		g/g	6.6	25	21-NOV-17
WG2667135-2 LCS								
Total Organic Carbon			100.2		%		80-120	21-NOV-17
WG2667135-1 MB								
Total Organic Carbon			<0.10		%		0.1	21-NOV-17
Fraction Organic Carbon			<0.0010		g/g		0.001	21-NOV-17
VOC-511-HS-WT	**Soil**							
Batch R3883452								
WG2661265-4 DUP		**WG2661265-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	13-NOV-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	13-NOV-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	13-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3883452								
WG2661265-4 DUP		**WG2661265-3**						
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	13-NOV-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	13-NOV-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	13-NOV-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	13-NOV-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	13-NOV-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	13-NOV-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	13-NOV-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	13-NOV-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	13-NOV-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	13-NOV-17
WG2661265-2 LCS								
1,1,1,2-Tetrachloroethane			102.9		%		60-130	13-NOV-17
1,1,2,2-Tetrachloroethane			101.2		%		60-130	13-NOV-17
1,1,1-Trichloroethane			101.2		%		60-130	13-NOV-17
1,1,2-Trichloroethane			105.4		%		60-130	13-NOV-17
1,1-Dichloroethane			105.7		%		60-130	13-NOV-17
1,1-Dichloroethylene			92.8		%		60-130	13-NOV-17
1,2-Dibromoethane			105.5		%		70-130	13-NOV-17
1,2-Dichlorobenzene			102.3		%		70-130	13-NOV-17
1,2-Dichloroethane			104.4		%		60-130	13-NOV-17
1,2-Dichloropropane			105.6		%		70-130	13-NOV-17
1,3-Dichlorobenzene			104.2		%		70-130	13-NOV-17
1,4-Dichlorobenzene			106.4		%		70-130	13-NOV-17
Acetone			113.0		%		60-140	13-NOV-17
Benzene			104.7		%		70-130	13-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3883452								
WG2661265-2 LCS								
Bromodichloromethane			98.6		%		50-140	13-NOV-17
Bromoform			104.1		%		70-130	13-NOV-17
Bromomethane			96.7		%		50-140	13-NOV-17
Carbon tetrachloride			99.6		%		70-130	13-NOV-17
Chlorobenzene			104.1		%		70-130	13-NOV-17
Chloroform			104.6		%		70-130	13-NOV-17
cis-1,2-Dichloroethylene			105.0		%		70-130	13-NOV-17
cis-1,3-Dichloropropene			105.4		%		70-130	13-NOV-17
Dibromochloromethane			104.1		%		60-130	13-NOV-17
Dichlorodifluoromethane			60.7		%		50-140	13-NOV-17
Ethylbenzene			98.1		%		70-130	13-NOV-17
n-Hexane			100.7		%		70-130	13-NOV-17
Methylene Chloride			111.3		%		70-130	13-NOV-17
MTBE			102.6		%		70-130	13-NOV-17
m+p-Xylenes			98.5		%		70-130	13-NOV-17
Methyl Ethyl Ketone			109.6		%		60-140	13-NOV-17
Methyl Isobutyl Ketone			109.0		%		60-140	13-NOV-17
o-Xylene			98.9		%		70-130	13-NOV-17
Styrene			99.1		%		70-130	13-NOV-17
Tetrachloroethylene			99.5		%		60-130	13-NOV-17
Toluene			101.1		%		70-130	13-NOV-17
trans-1,2-Dichloroethylene			104.6		%		60-130	13-NOV-17
trans-1,3-Dichloropropene			101.2		%		70-130	13-NOV-17
Trichloroethylene			103.8		%		60-130	13-NOV-17
Trichlorofluoromethane			97.2		%		50-140	13-NOV-17
Vinyl chloride			90.2		%		60-140	13-NOV-17
WG2661265-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	13-NOV-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	13-NOV-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	13-NOV-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	13-NOV-17
1,1-Dichloroethane			<0.050		ug/g		0.05	13-NOV-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	13-NOV-17
1,2-Dibromoethane			<0.050		ug/g		0.05	13-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3883452								
WG2661265-1 MB								
1,2-Dichlorobenzene			<0.050		ug/g		0.05	13-NOV-17
1,2-Dichloroethane			<0.050		ug/g		0.05	13-NOV-17
1,2-Dichloropropane			<0.050		ug/g		0.05	13-NOV-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	13-NOV-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	13-NOV-17
Acetone			<0.50		ug/g		0.5	13-NOV-17
Benzene			<0.0068		ug/g		0.0068	13-NOV-17
Bromodichloromethane			<0.050		ug/g		0.05	13-NOV-17
Bromoform			<0.050		ug/g		0.05	13-NOV-17
Bromomethane			<0.050		ug/g		0.05	13-NOV-17
Carbon tetrachloride			<0.050		ug/g		0.05	13-NOV-17
Chlorobenzene			<0.050		ug/g		0.05	13-NOV-17
Chloroform			<0.050		ug/g		0.05	13-NOV-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	13-NOV-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	13-NOV-17
Dibromochloromethane			<0.050		ug/g		0.05	13-NOV-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	13-NOV-17
Ethylbenzene			<0.018		ug/g		0.018	13-NOV-17
n-Hexane			<0.050		ug/g		0.05	13-NOV-17
Methylene Chloride			<0.050		ug/g		0.05	13-NOV-17
MTBE			<0.050		ug/g		0.05	13-NOV-17
m+p-Xylenes			<0.030		ug/g		0.03	13-NOV-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	13-NOV-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	13-NOV-17
o-Xylene			<0.020		ug/g		0.02	13-NOV-17
Styrene			<0.050		ug/g		0.05	13-NOV-17
Tetrachloroethylene			<0.050		ug/g		0.05	13-NOV-17
Toluene			<0.080		ug/g		0.08	13-NOV-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	13-NOV-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	13-NOV-17
Trichloroethylene			<0.010		ug/g		0.01	13-NOV-17
Trichlorofluoromethane			<0.050		ug/g		0.05	13-NOV-17
Vinyl chloride			<0.020		ug/g		0.02	13-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3883452								
WG2661265-1 MB								
Surrogate: 1,4-Difluorobenzene			106.3		%		50-140	13-NOV-17
Surrogate: 4-Bromofluorobenzene			107.9		%		50-140	13-NOV-17
WG2661265-5 MS		**WG2661265-3**						
1,1,1,2-Tetrachloroethane			104.5		%		50-140	13-NOV-17
1,1,2,2-Tetrachloroethane			106.5		%		50-140	13-NOV-17
1,1,1-Trichloroethane			103.9		%		50-140	13-NOV-17
1,1,2-Trichloroethane			109.4		%		50-140	13-NOV-17
1,1-Dichloroethane			108.9		%		50-140	13-NOV-17
1,1-Dichloroethylene			95.0		%		50-140	13-NOV-17
1,2-Dibromoethane			108.5		%		50-140	13-NOV-17
1,2-Dichlorobenzene			106.2		%		50-140	13-NOV-17
1,2-Dichloroethane			106.5		%		50-140	13-NOV-17
1,2-Dichloropropane			108.6		%		50-140	13-NOV-17
1,3-Dichlorobenzene			104.7		%		50-140	13-NOV-17
1,4-Dichlorobenzene			106.6		%		50-140	13-NOV-17
Acetone			112.8		%		50-140	13-NOV-17
Benzene			107.6		%		50-140	13-NOV-17
Bromodichloromethane			100.9		%		50-140	13-NOV-17
Bromoform			108.2		%		50-140	13-NOV-17
Bromomethane			98.6		%		50-140	13-NOV-17
Carbon tetrachloride			102.7		%		50-140	13-NOV-17
Chlorobenzene			107.1		%		50-140	13-NOV-17
Chloroform			107.5		%		50-140	13-NOV-17
cis-1,2-Dichloroethylene			107.6		%		50-140	13-NOV-17
cis-1,3-Dichloropropene			105.2		%		50-140	13-NOV-17
Dibromochloromethane			106.3		%		50-140	13-NOV-17
Dichlorodifluoromethane			66.4		%		50-140	13-NOV-17
Ethylbenzene			100.6		%		50-140	13-NOV-17
n-Hexane			106.2		%		50-140	13-NOV-17
Methylene Chloride			113.7		%		50-140	13-NOV-17
MTBE			105.6		%		50-140	13-NOV-17
m+p-Xylenes			100.9		%		50-140	13-NOV-17
Methyl Ethyl Ketone			113.6		%		50-140	13-NOV-17
Methyl Isobutyl Ketone			112.8		%		50-140	13-NOV-17

Quality Control Report

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3883452								
WG2661265-5 MS		**WG2661265-3**						
o-Xylene			102.2		%		50-140	13-NOV-17
Styrene			100.5		%		50-140	13-NOV-17
Tetrachloroethylene			104.0		%		50-140	13-NOV-17
Toluene			105.5		%		50-140	13-NOV-17
trans-1,2-Dichloroethylene			107.2		%		50-140	13-NOV-17
trans-1,3-Dichloropropene			102.3		%		50-140	13-NOV-17
Trichloroethylene			106.0		%		50-140	13-NOV-17
Trichlorofluoromethane			99.1		%		50-140	13-NOV-17
Vinyl chloride			94.5		%		50-140	13-NOV-17

Quality Control Report

Workorder: L2019990 Report Date: 22-NOV-17

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2019990 Report Date: 22-NOV-17

Client: AECOM CANADA LTD. - KITCHENER
50 Sportsworld Crossing Road Suite 290
KITCHENER ON N2P 0A4
Contact: Zahra Parhizgari

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Plant Available Nutrients							
Available Nitrate-N							
	1	07-NOV-17 10:35	15-NOV-17 14:56	3	8	days	EHT
	3	07-NOV-17 12:16	15-NOV-17 14:56	3	8	days	EHT
	5	07-NOV-17 14:25	15-NOV-17 14:56	3	8	days	EHT
	7	07-NOV-17 15:21	15-NOV-17 14:56	3	8	days	EHT

Legend & Qualifier Definitions:

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

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2019990 were received on 08-NOV-17 15:00.

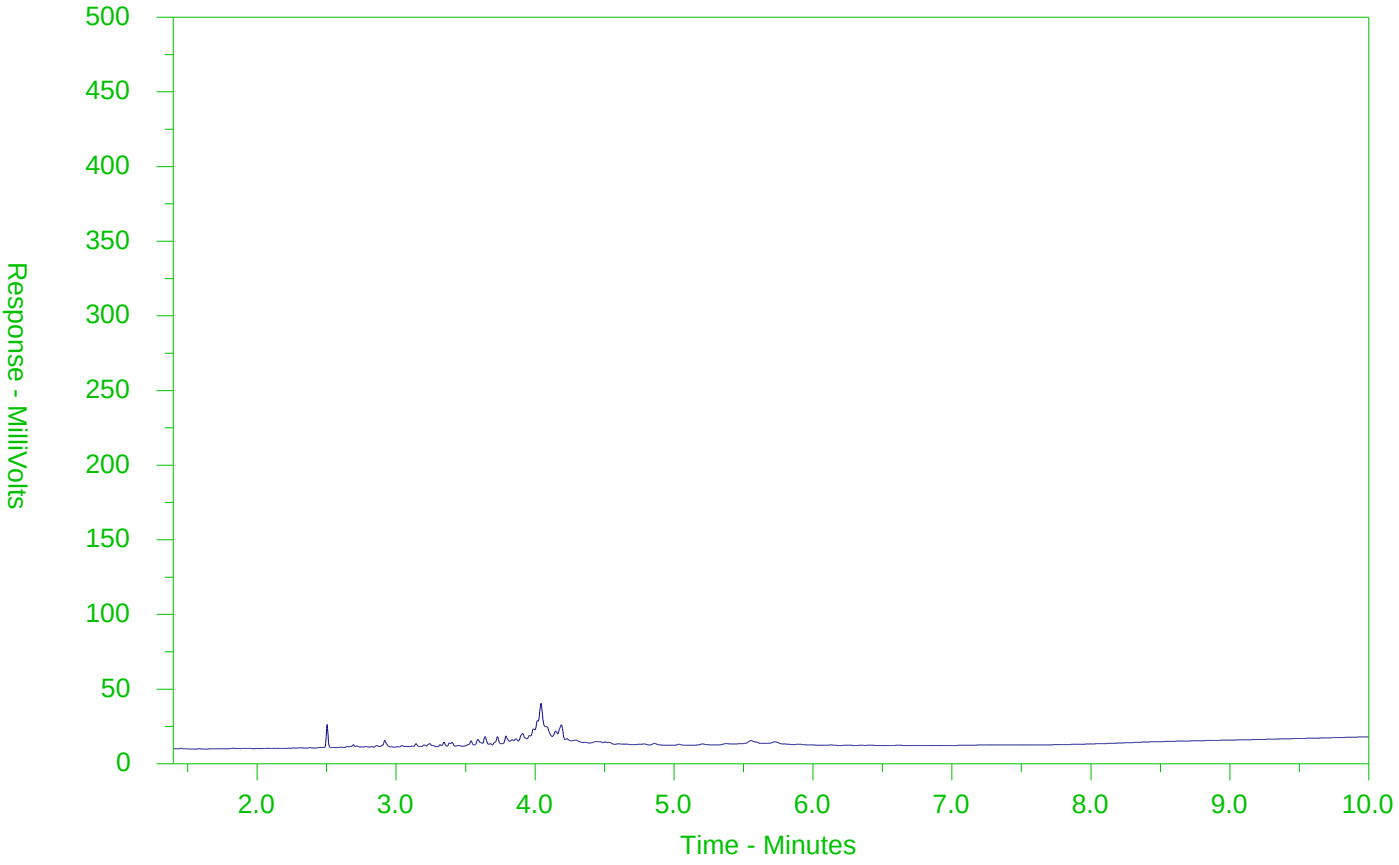
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where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

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

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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2019990-2
Client Sample ID: T2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

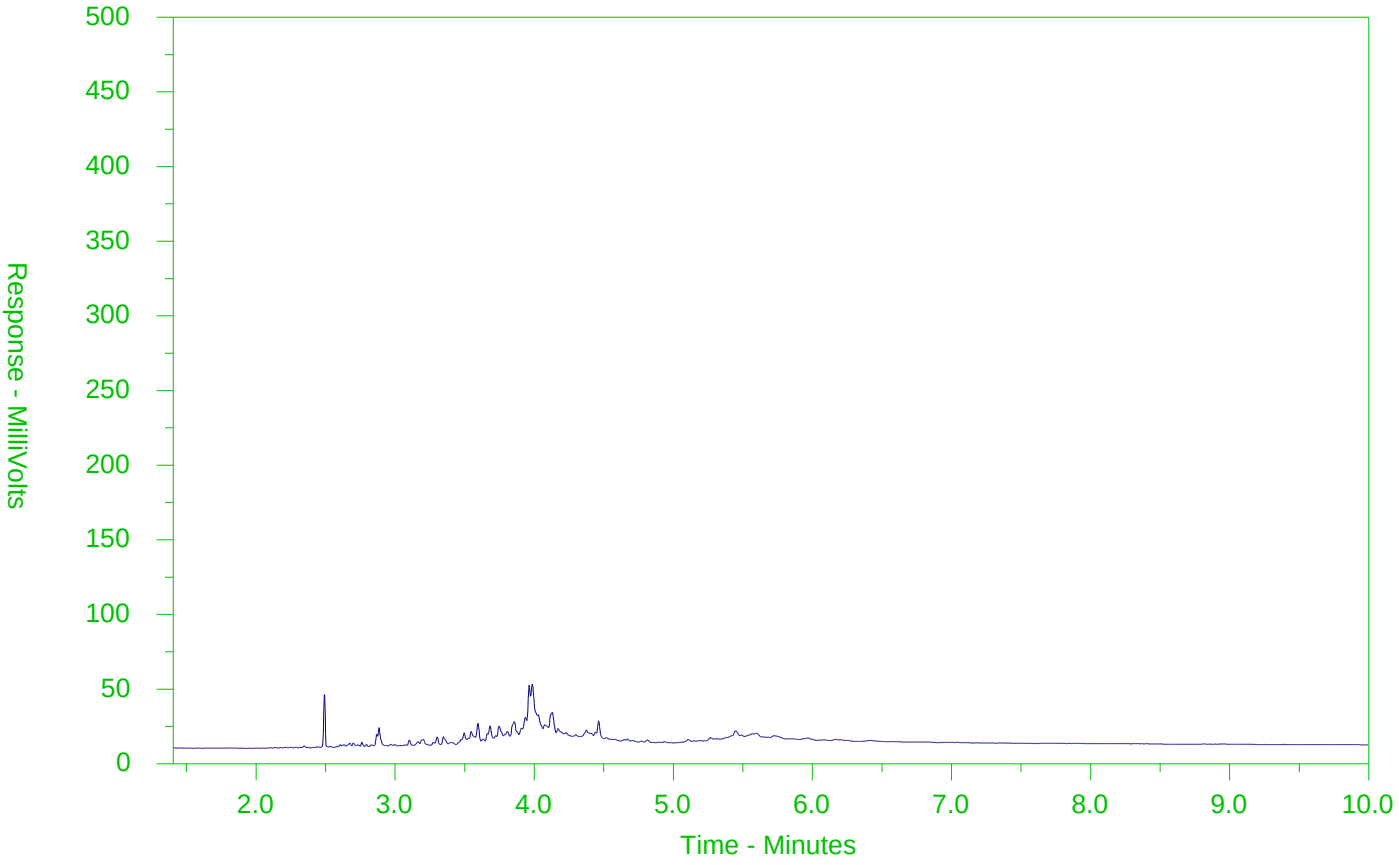
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2019990-4
Client Sample ID: T4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

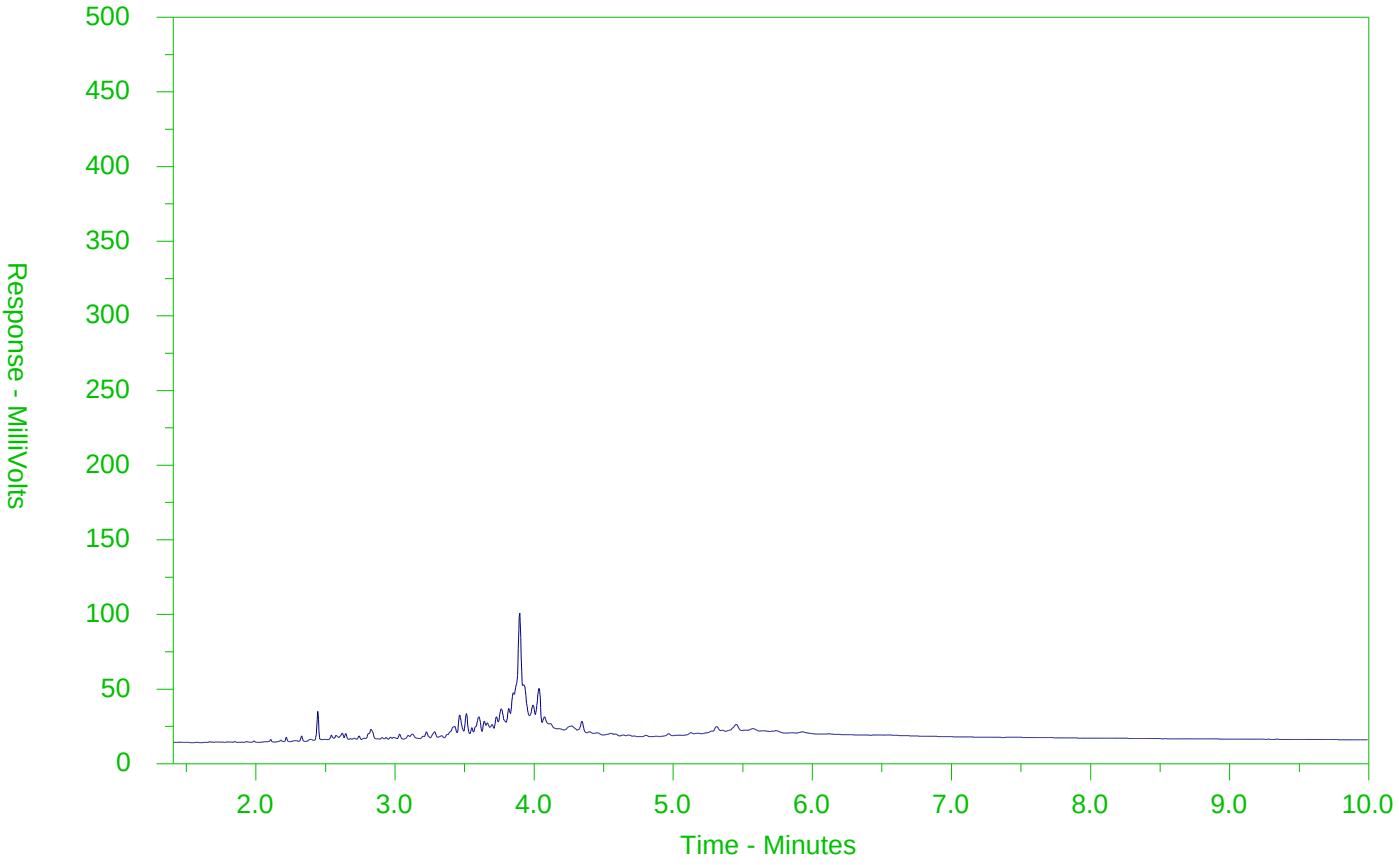
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2019990-6
Client Sample ID: T6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.