

Bottom Ash Data

2018 Week 22

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on June 11, 2018. The data represents bottom ash composite results for week 22 of 2018 (May 27, 2018 to June 2, 2018).

The bottom ash meets the requirements of Metro Vancouver's Bottom Ash Management Plan and is suitable for beneficial use during Coquitlam Landfill closure works.



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Date Received: 05-JUN-18
Report Date: 08-JUN-18 16:47 (MT)
Version: FINAL

Client Phone: 604-521-1025

Certificate of Analysis

Lab Work Order #: L2106267
Project P.O. #: VANCO-0000047506
Job Reference: 46693 WEEKLY BOTTOM ASH-SUITE
C of C Numbers:
Legal Site Desc:

Brent Mack, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L2106267-1 soil 30-MAY-18 09:00 BA1822-A-1	L2106267-2 soil 30-MAY-18 09:00 BA1822-A-2	L2106267-3 soil 30-MAY-18 09:00 BA1822-A-3	L2106267-4 soil 30-MAY-18 09:00 BA1822-A-4	L2106267-5 soil 30-MAY-18 09:00 BA1822-A-5	
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	17.6	16.3	16.0	17.1	16.6
	pH (1:2 soil:water) (pH)	11.38	11.41	11.36	11.45	11.54
Metals	Aluminum (Al) (mg/kg)	30400	36800	35600	32500	28500
	Antimony (Sb) (mg/kg)	168	152	166	146	146
	Arsenic (As) (mg/kg)	45.9	50.5	56.8	47.6	53.4
	Barium (Ba) (mg/kg)	550	550	536	489	472
	Beryllium (Be) (mg/kg)	0.43	0.47	0.46	0.38	0.41
	Bismuth (Bi) (mg/kg)	8.75	8.04	7.04	6.84	6.26
	Boron (B) (mg/kg)	252	290	274	218	214
	Cadmium (Cd) (mg/kg)	16.1	13.5	14.8	13.8	32.0
	Calcium (Ca) (mg/kg)	142000	131000	146000	124000	126000
	Chromium (Cr) (mg/kg)	254	188	301	171	135
	Cobalt (Co) (mg/kg)	27.8	60.0	69.9	54.6	25.4
	Copper (Cu) (mg/kg)	3010	4910	3770	24200	2190
	Iron (Fe) (mg/kg)	76900	67400	79300	81200	58900
	Lead (Pb) (mg/kg)	488	556	1360	1500	712
	Lithium (Li) (mg/kg)	18.4	38.0	20.6	20.8	15.9
	Magnesium (Mg) (mg/kg)	11800	11500	12200	10400	11400
	Manganese (Mn) (mg/kg)	916	823	2000	869	676
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Molybdenum (Mo) (mg/kg)	34.8	60.1	74.0	26.2	24.0
	Nickel (Ni) (mg/kg)	168	129	156	115	71.2
	Phosphorus (P) (mg/kg)	10900	9600	10100	11000	9220
	Potassium (K) (mg/kg)	6080	5720	5920	5680	5810
	Selenium (Se) (mg/kg)	0.40	0.41	0.45	0.45	0.30
	Silver (Ag) (mg/kg)	5.87	4.72	22.7	7.80	3.64
	Sodium (Na) (mg/kg)	17100	18100	18500	16400	16400
	Strontium (Sr) (mg/kg)	342	338	331	317	316
	Sulfur (S) (mg/kg)	17100	14900	17500	15300	14200
	Thallium (Tl) (mg/kg)	0.083	0.077	0.084	0.084	0.065
	Tin (Sn) (mg/kg)	146	176	213	147	118
	Titanium (Ti) (mg/kg)	812	892	1050	757	620
	Tungsten (W) (mg/kg)	5.53	4.52	5.51	4.72	5.08
	Uranium (U) (mg/kg)	5.74	5.54	5.85	5.87	5.27
	Vanadium (V) (mg/kg)	57.7	59.6	61.1	55.3	50.5
	Zinc (Zn) (mg/kg)	5520	4460	4590	4640	4000
	Zirconium (Zr) (mg/kg)	1.2	1.4	1.6	1.4	1.5

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L2106267-6 soil 30-MAY-18 09:00 BA1822-A-6	L2106267-7 soil 30-MAY-18 09:00 BA1822-A-7	L2106267-8 soil 30-MAY-18 09:00 BA1822-A-8	L2106267-9 soil 30-MAY-18 09:00 BA1822-A-9	L2106267-10 soil 30-MAY-18 09:00 BA1822-A-10	
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	16.0	17.1	16.8	16.6	16.6
	pH (1:2 soil:water) (pH)	11.44	11.41	11.36	11.51	11.37
Metals	Aluminum (Al) (mg/kg)	32300	29500	32800	42500	32700
	Antimony (Sb) (mg/kg)	159	155	144	165	170
	Arsenic (As) (mg/kg)	47.9	56.2	52.9	50.5	51.5
	Barium (Ba) (mg/kg)	451	562	598	508	505
	Beryllium (Be) (mg/kg)	0.40	0.39	0.43	0.38	0.39
	Bismuth (Bi) (mg/kg)	7.61	6.32	6.36	8.02	6.84
	Boron (B) (mg/kg)	255	235	215	253	229
	Cadmium (Cd) (mg/kg)	17.3	13.7	14.9	42.5	15.8
	Calcium (Ca) (mg/kg)	123000	123000	121000	132000	132000
	Chromium (Cr) (mg/kg)	165	164	190	189	168
	Cobalt (Co) (mg/kg)	23.8	23.2	365	61.8	25.2
	Copper (Cu) (mg/kg)	6440	3640	2650	2050	3890
	Iron (Fe) (mg/kg)	58800	84600	109000	50800	56200
	Lead (Pb) (mg/kg)	1540	535	525	569	447
	Lithium (Li) (mg/kg)	23.4	16.7	17.9	25.1	18.1
	Magnesium (Mg) (mg/kg)	11500	11700	11500	12500	10600
	Manganese (Mn) (mg/kg)	1110	781	6690	775	1180
	Mercury (Hg) (mg/kg)	<0.050	<0.050	<0.050	<0.050	<0.050
	Molybdenum (Mo) (mg/kg)	26.6	30.9	31.9	38.5	29.1
	Nickel (Ni) (mg/kg)	109	147	179	164	178
	Phosphorus (P) (mg/kg)	8880	9850	9330	10100	10200
	Potassium (K) (mg/kg)	6060	5520	5920	6080	6100
	Selenium (Se) (mg/kg)	0.52	0.40	0.45	0.33	0.49
	Silver (Ag) (mg/kg)	4.61	19.5	3.77	5.83	7.22
	Sodium (Na) (mg/kg)	16700	17100	16600	16700	17200
	Strontium (Sr) (mg/kg)	470	292	287	306	319
	Sulfur (S) (mg/kg)	15900	14600	14100	17200	16800
	Thallium (Tl) (mg/kg)	0.073	0.073	0.083	0.086	0.085
	Tin (Sn) (mg/kg)	131	121	132	174	169
	Titanium (Ti) (mg/kg)	1000	1530	1470	1210	1020
	Tungsten (W) (mg/kg)	5.77	6.77	4.26	15.9	6.34
	Uranium (U) (mg/kg)	5.28	4.91	5.01	6.05	5.54
	Vanadium (V) (mg/kg)	53.0	54.8	52.2	56.9	54.3
	Zinc (Zn) (mg/kg)	4890	3730	7690	4440	6670
	Zirconium (Zr) (mg/kg)	1.4	1.6	1.4	1.5	1.3

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2106267-11 soil 30-MAY-18 09:00 BA1822-A-11	L2106267-12 soil 30-MAY-18 09:00 BA1822-A-12		
Grouping	Analyte				
SOIL					
Physical Tests	Moisture (%)	17.7	17.8		
	pH (1:2 soil:water) (pH)	11.24	11.26		
Metals	Aluminum (Al) (mg/kg)	29500	28700		
	Antimony (Sb) (mg/kg)	190	166		
	Arsenic (As) (mg/kg)	46.3	52.4		
	Barium (Ba) (mg/kg)	447	475		
	Beryllium (Be) (mg/kg)	0.43	0.41		
	Bismuth (Bi) (mg/kg)	7.01	7.85		
	Boron (B) (mg/kg)	198	267		
	Cadmium (Cd) (mg/kg)	18.1	15.6		
	Calcium (Ca) (mg/kg)	129000	125000		
	Chromium (Cr) (mg/kg)	150	179		
	Cobalt (Co) (mg/kg)	39.1	22.3		
	Copper (Cu) (mg/kg)	5040	10500		
	Iron (Fe) (mg/kg)	51700	60100		
	Lead (Pb) (mg/kg)	668	815		
	Lithium (Li) (mg/kg)	17.1	17.4		
	Magnesium (Mg) (mg/kg)	10900	10800		
	Manganese (Mn) (mg/kg)	594	1000		
	Mercury (Hg) (mg/kg)	<0.050	<0.050		
	Molybdenum (Mo) (mg/kg)	29.8	26.6		
	Nickel (Ni) (mg/kg)	95.5	138		
	Phosphorus (P) (mg/kg)	9530	10100		
	Potassium (K) (mg/kg)	5830	5740		
	Selenium (Se) (mg/kg)	0.34	0.47		
	Silver (Ag) (mg/kg)	5.15	9.93		
	Sodium (Na) (mg/kg)	16800	15600		
	Strontium (Sr) (mg/kg)	503	327		
	Sulfur (S) (mg/kg)	17000	16300		
	Thallium (Tl) (mg/kg)	0.081	0.098		
	Tin (Sn) (mg/kg)	142	687		
	Titanium (Ti) (mg/kg)	970	821		
	Tungsten (W) (mg/kg)	5.21	5.29		
	Uranium (U) (mg/kg)	5.81	5.13		
Vanadium (V) (mg/kg)	52.0	59.5			
Zinc (Zn) (mg/kg)	4590	10400			
Zirconium (Zr) (mg/kg)	1.3	1.2			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2106267-1	L2106267-2	L2106267-3	L2106267-4	L2106267-5
		Description	soil	soil	soil	soil	soil
		Sampled Date	30-MAY-18	30-MAY-18	30-MAY-18	30-MAY-18	30-MAY-18
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1822-A-1	BA1822-A-2	BA1822-A-3	BA1822-A-4	BA1822-A-5
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.52	11.57	11.52	11.52	11.33
	2nd Preliminary pH (pH)		10.02	10.08	10.16	9.99	8.87
	Final pH (pH)		5.83	5.59	5.46	5.74	5.34
	Extraction Solution Initial pH (pH)		2.84	2.84	2.84	2.84	2.84
	Antimony (Sb)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Barium (Ba)-Leachable (mg/L)		<2.5	<2.5	<2.5	<2.5	<2.5
	Beryllium (Be)-Leachable (mg/L)		<0.025	<0.025	<0.025	<0.025	<0.025
	Boron (B)-Leachable (mg/L)		2.60	2.29	3.13	2.45	2.11
	Cadmium (Cd)-Leachable (mg/L)		0.250	0.220	0.789	0.264	0.252
	Calcium (Ca)-Leachable (mg/L)		1950	1940	1800	1970	1690
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.540	1.00	0.678	1.00	0.429
	Copper (Cu)-Leachable (mg/L)		1.84	1.80	2.35	1.84	1.81
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	5.5	<5.0	7.6
	Lead (Pb)-Leachable (mg/L)		3.86	0.31	8.14	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		115	113	107	115	101
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.49	0.44	0.69	0.46	0.58
	Selenium (Se)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Silver (Ag)-Leachable (mg/L)		<0.050	<0.050	<0.050	<0.050	<0.050
	Thallium (Tl)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V)-Leachable (mg/L)		<0.15	<0.15	<0.15	<0.15	<0.15
	Zinc (Zn)-Leachable (mg/L)		63.7	63.3	90.6	60.6	89.2

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2106267-6	L2106267-7	L2106267-8	L2106267-9	L2106267-10
		Description	soil	soil	soil	soil	soil
		Sampled Date	30-MAY-18	30-MAY-18	30-MAY-18	30-MAY-18	30-MAY-18
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1822-A-6	BA1822-A-7	BA1822-A-8	BA1822-A-9	BA1822-A-10
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.41	11.43	11.47	11.55	11.49
	2nd Preliminary pH (pH)		9.40	9.32	9.41	9.69	9.47
	Final pH (pH)		5.63	5.83	5.80	5.73	5.83
	Extraction Solution Initial pH (pH)		2.84	2.84	2.84	2.84	2.84
	Antimony (Sb)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Barium (Ba)-Leachable (mg/L)		<2.5	<2.5	<2.5	<2.5	<2.5
	Beryllium (Be)-Leachable (mg/L)		<0.025	<0.025	<0.025	<0.025	<0.025
	Boron (B)-Leachable (mg/L)		2.06	2.28	2.32	2.17	2.35
	Cadmium (Cd)-Leachable (mg/L)		0.200	0.260	0.219	0.277	0.275
	Calcium (Ca)-Leachable (mg/L)		1840	1860	1840	1840	1870
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		1.05	0.325	1.12	0.307	0.586
	Copper (Cu)-Leachable (mg/L)		0.248	1.38	1.84	1.42	0.842
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)		1.12	<0.25	<0.25	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		107	108	109	110	108
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.84	0.56	0.43	0.46	0.66
	Selenium (Se)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Silver (Ag)-Leachable (mg/L)		<0.050	<0.050	<0.050	<0.050	<0.050
	Thallium (Tl)-Leachable (mg/L)		<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V)-Leachable (mg/L)		<0.15	<0.15	<0.15	<0.15	<0.15
	Zinc (Zn)-Leachable (mg/L)		47.2	98.8	77.0	64.9	90.1

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2106267-11 soil 30-MAY-18 09:00 BA1822-A-11	L2106267-12 soil 30-MAY-18 09:00 BA1822-A-12		
Grouping	Analyte				
SOIL					
TCLP Metals	1st Preliminary pH (pH)	11.46	11.50		
	2nd Preliminary pH (pH)	9.25	9.14		
	Final pH (pH)	5.63	5.90		
	Extraction Solution Initial pH (pH)	2.84	2.84		
	Antimony (Sb)-Leachable (mg/L)	<1.0	<1.0		
	Arsenic (As)-Leachable (mg/L)	<1.0	<1.0		
	Barium (Ba)-Leachable (mg/L)	<2.5	<2.5		
	Beryllium (Be)-Leachable (mg/L)	<0.025	<0.025		
	Boron (B)-Leachable (mg/L)	2.29	2.45		
	Cadmium (Cd)-Leachable (mg/L)	0.207	0.233		
	Calcium (Ca)-Leachable (mg/L)	1840	1980		
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25		
	Cobalt (Co)-Leachable (mg/L)	1.19	0.530		
	Copper (Cu)-Leachable (mg/L)	0.892	1.76		
	Iron (Fe)-Leachable (mg/L)	5.1	<5.0		
	Lead (Pb)-Leachable (mg/L)	<0.25	0.26		
	Magnesium (Mg)-Leachable (mg/L)	107	115		
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010		
	Nickel (Ni)-Leachable (mg/L)	0.48	1.84		
	Selenium (Se)-Leachable (mg/L)	<1.0	<1.0		
	Silver (Ag)-Leachable (mg/L)	<0.050	<0.050		
	Thallium (Tl)-Leachable (mg/L)	<1.0	<1.0		
	Vanadium (V)-Leachable (mg/L)	<0.15	<0.15		
	Zinc (Zn)-Leachable (mg/L)	75.7	62.2		

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Cadmium (Cd)	DUP-H	L2106267-12
Duplicate	Cobalt (Co)	DUP-H	L2106267-12
Duplicate	Copper (Cu)	DUP-H	L2106267-12
Duplicate	Iron (Fe)	DUP-H	L2106267-12
Duplicate	Manganese (Mn)	DUP-H	L2106267-12
Duplicate	Nickel (Ni)	DUP-H	L2106267-12
Duplicate	Silver (Ag)	DUP-H	L2106267-12
Duplicate	Tin (Sn)	DUP-H	L2106267-12
Duplicate	Uranium (U)	DUP-H	L2106267-1, -10, -11, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Zinc (Zn)	DUP-H	L2106267-12
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2106267-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2106267-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2106267-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
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**
HG-200.2-CVAF-VA	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
		Soil samples are digested with hot nitric and hydrochloric acids, followed by CVAAS analysis. This method is fully compliant with the BC SALM strong acid leachable metals digestion method.	
HG-TCLP-CVAFS-VA	Soil	Mercury by CVAAS (TCLP)	EPA 1311/245.7
		This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter and analysed using atomic absorption spectrophotometry (EPA 245.7).	
MET-200.2-CCMS-VA	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
		This method uses a heated strong acid digestion with HNO ₃ 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.	
MET-TCLP-ICP-VA	Soil	Metals by ICPOES (TCLP)	EPA 1311/6010B
		This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter and analysed using inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).	
MOISTURE-VA	Soil	Moisture content	CWS for PHC in Soil - Tier 1
		This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.	
PH-1:2-VA	Soil	pH in Soil (1:2 Soil:Water Extraction)	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL
		This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.	

** 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
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



L2106267-COFC

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

COC # _____

Page _____ of _____

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)	
Company:	Covanta Energy	<input type="checkbox"/> Standard	<input type="checkbox"/> Other	<input checked="" type="radio"/> Regular (Standard Turnaround Times - Business Days)	
Contact:	Steve Mckinney / Dan Skrypnik	<input checked="" type="checkbox"/> PDF	<input type="checkbox"/> Excel	<input type="checkbox"/> Digital	<input type="checkbox"/> Fax
Address:	5150 Riverbend Drive Burnaby BC	Email 1:	smckinney@covanta.com		<input type="radio"/> Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Phone:	604-521-1025	Email 2:	rijohnson4@covanta.com		<input type="radio"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	<input type="checkbox"/> Yes <input type="checkbox"/> No	Email 3:	dskrypnik@covanta.com		<input type="radio"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT
			brent.kirkpatrick@metrovancover.org		
			Sarah.Wellman@metrovancover.org		

Invoice To Same as Report? <input type="checkbox"/> Yes <input type="checkbox"/> No		Client / Project Information		Please indicate below Filtered, Preserved or both (F, P, F/P)	
Hardcopy of Invoice with Report? <input type="checkbox"/> Yes <input type="checkbox"/> No		Job #:			
Company:		PO / AFE: PO# 46693 Weekly Bottom Ash - Suite			
Contact:		LSD: (includes 2:1 pH)			
Address:		Quote #:			
Phone:		Fax:			

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	MET-TCLP-VA (all metals, Hg)	MOISTURE	Chrome 6	MET-CSR+FULL-VA (all metals)	Number of Containers			
BA1822-A-1		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-2		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-3		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-4		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-5		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-6		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-7		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-8		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-9		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-10		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-11		30-May-18	9:00	Soil	X	X		X				1
BA1822-A-12		30-May-18	9:00	Soil	X	X		X				1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)			SHIPMENT VERIFICATION (lab use only)				
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
<i>[Signature]</i>	5-Jun-18	08:00	<i>[Signature]</i>	6/5/18	12:11 PM	20 °C				