

Bottom Ash Data

2018 Week 12

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on April 6, 2018. The data represents bottom ash composite results for week 12 of 2018 (March 18, 2018 to March 24, 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: 28-MAR-18
Report Date: 05-APR-18 14:55 (MT)
Version: FINAL

Client Phone: 604-521-1025

Certificate of Analysis

Lab Work Order #: L2073419
Project P.O. #: VANCO-0000047506
Job Reference:
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	L2073419-1 soil 21-MAR-18 09:00 BA1812-A-1	L2073419-2 soil 21-MAR-18 09:00 BA1812-A-2	L2073419-3 soil 21-MAR-18 09:00 BA1812-A-3	L2073419-4 soil 21-MAR-18 09:00 BA1812-A-4	L2073419-5 soil 21-MAR-18 09:00 BA1812-A-5	
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	20.9	18.9	20.1	20.8	19.1
	pH (1:2 soil:water) (pH)	10.59	10.76	10.64	10.75	10.80
Metals	Aluminum (Al) (mg/kg)	31200	40900	32700	35000	31600
	Antimony (Sb) (mg/kg)	122	123	132	115	184
	Arsenic (As) (mg/kg)	25.5	30.8	32.4	27.1	37.1
	Barium (Ba) (mg/kg)	493	453	471	460	450
	Beryllium (Be) (mg/kg)	0.42	0.43	0.45	0.43	0.41
	Bismuth (Bi) (mg/kg)	8.28	7.21	6.33	6.40	8.38
	Boron (B) (mg/kg)	292	280	296	334	371
	Cadmium (Cd) (mg/kg)	13.6	14.2	13.4	25.7	15.6
	Calcium (Ca) (mg/kg)	153000	149000	157000	156000	153000
	Chromium (Cr) (mg/kg)	154	126	328	208	165
	Cobalt (Co) (mg/kg)	16.0	42.2	35.8	18.5	43.4
	Copper (Cu) (mg/kg)	3070	1630	3660	30700	4920
	Iron (Fe) (mg/kg)	63900	58200	56800	50200	47000
	Lead (Pb) (mg/kg)	601	1760	354	307	708
	Lithium (Li) (mg/kg)	15.4	36.1	15.7	16.4	14.0
	Magnesium (Mg) (mg/kg)	12100	11100	11900	12900	11700
	Manganese (Mn) (mg/kg)	884	823	831	751	811
	Mercury (Hg) (mg/kg)	0.110	0.061	0.077	0.075	0.081
	Molybdenum (Mo) (mg/kg)	63.5	70.0	98.5	84.6	62.6
	Nickel (Ni) (mg/kg)	196	121	492	814	157
	Phosphorus (P) (mg/kg)	14400	15900	16000	14600	14400
	Potassium (K) (mg/kg)	5590	5690	6700	5650	6120
	Selenium (Se) (mg/kg)	0.38	0.54	0.43	1.13	0.56
	Silver (Ag) (mg/kg)	4.13	3.89	3.70	3.81	5.97
	Sodium (Na) (mg/kg)	14600	15000	16200	14300	14800
	Strontium (Sr) (mg/kg)	320	312	343	295	330
	Sulfur (S) (mg/kg)	14600	15000	15700	13800	17200
	Thallium (Tl) (mg/kg)	0.087	0.099	0.109	0.094	0.099
	Tin (Sn) (mg/kg)	117	106	121	91.5	122
	Titanium (Ti) (mg/kg)	514	618	579	458	699
	Tungsten (W) (mg/kg)	8.03	12.6	6.86	5.27	11.4
	Uranium (U) (mg/kg)	6.75	6.73	8.06	6.40	7.14
	Vanadium (V) (mg/kg)	61.9	65.7	71.8	69.0	66.2
	Zinc (Zn) (mg/kg)	3000	4330	3840	4960	4210
	Zirconium (Zr) (mg/kg)	1.1	1.8	1.7	1.6	1.4

* 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	L2073419-6 soil 21-MAR-18 09:00 BA1812-A-6	L2073419-7 soil 21-MAR-18 09:00 BA1812-A-7	L2073419-8 soil 21-MAR-18 09:00 BA1812-A-8	L2073419-9 soil 21-MAR-18 09:00 BA1812-A-9	L2073419-10 soil 21-MAR-18 09:00 BA1812-A-10	
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	19.6	20.1	19.0	20.5	20.3
	pH (1:2 soil:water) (pH)	10.48	10.90	10.73	10.72	10.55
Metals	Aluminum (Al) (mg/kg)	43100	33300	34300	31300	31400
	Antimony (Sb) (mg/kg)	174	157	137	142	144
	Arsenic (As) (mg/kg)	45.0	63.6	31.3	30.8	38.9
	Barium (Ba) (mg/kg)	455	441	468	441	418
	Beryllium (Be) (mg/kg)	0.47	0.43	0.41	0.48	0.43
	Bismuth (Bi) (mg/kg)	9.80	9.30	7.60	8.62	8.82
	Boron (B) (mg/kg)	380	333	265	312	335
	Cadmium (Cd) (mg/kg)	20.8	15.1	15.1	19.6	17.3
	Calcium (Ca) (mg/kg)	153000	150000	142000	148000	147000
	Chromium (Cr) (mg/kg)	137	245	780	132	134
	Cobalt (Co) (mg/kg)	19.6	22.3	123	21.3	33.4
	Copper (Cu) (mg/kg)	4890	2440	2890	4430	2790
	Iron (Fe) (mg/kg)	39600	62900	60500	55600	71400
	Lead (Pb) (mg/kg)	351	340	898	301	338
	Lithium (Li) (mg/kg)	17.0	16.3	15.1	14.9	16.3
	Magnesium (Mg) (mg/kg)	11700	12300	11400	11800	11500
	Manganese (Mn) (mg/kg)	851	877	888	1180	811
	Mercury (Hg) (mg/kg)	0.056	<0.050	<0.050	0.066	0.056
	Molybdenum (Mo) (mg/kg)	203	104	66.8	76.4	56.8
	Nickel (Ni) (mg/kg)	144	154	404	150	225
	Phosphorus (P) (mg/kg)	17100	11800	12600	15300	11600
	Potassium (K) (mg/kg)	7590	5830	6160	6310	5190
	Selenium (Se) (mg/kg)	0.48	0.46	0.38	0.50	0.42
	Silver (Ag) (mg/kg)	5.74	5.19	5.73	7.33	10.9
	Sodium (Na) (mg/kg)	17900	14500	14900	15100	13900
	Strontium (Sr) (mg/kg)	300	356	288	312	302
	Sulfur (S) (mg/kg)	19000	17300	15500	16400	15200
	Thallium (Tl) (mg/kg)	0.100	0.095	0.091	0.095	0.080
	Tin (Sn) (mg/kg)	148	133	117	108	285
	Titanium (Ti) (mg/kg)	691	631	637	361	639
	Tungsten (W) (mg/kg)	31.5	8.15	6.18	6.53	5.89
	Uranium (U) (mg/kg)	6.48	6.60	6.11	6.76	5.71
	Vanadium (V) (mg/kg)	63.5	63.6	59.5	65.2	66.9
	Zinc (Zn) (mg/kg)	6000	5790	3770	4140	3600
	Zirconium (Zr) (mg/kg)	2.0	1.1	2.4	1.5	1.2

* 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	L2073419-11 soil 21-MAR-18 09:00 BA1812-A-11	L2073419-12 soil 21-MAR-18 09:00 BA1812-A-12		
Grouping	Analyte				
SOIL					
Physical Tests	Moisture (%)	18.1	19.2		
	pH (1:2 soil:water) (pH)	10.64	10.64		
Metals	Aluminum (Al) (mg/kg)	47000	42600		
	Antimony (Sb) (mg/kg)	266	143		
	Arsenic (As) (mg/kg)	31.2	32.6		
	Barium (Ba) (mg/kg)	450	419		
	Beryllium (Be) (mg/kg)	0.42	0.39		
	Bismuth (Bi) (mg/kg)	6.55	8.85		
	Boron (B) (mg/kg)	309	424		
	Cadmium (Cd) (mg/kg)	12.8	15.8		
	Calcium (Ca) (mg/kg)	145000	146000		
	Chromium (Cr) (mg/kg)	761	155		
	Cobalt (Co) (mg/kg)	69.3	45.1		
	Copper (Cu) (mg/kg)	21300	4340		
	Iron (Fe) (mg/kg)	67500	84600		
	Lead (Pb) (mg/kg)	723	339		
	Lithium (Li) (mg/kg)	15.7	16.3		
	Magnesium (Mg) (mg/kg)	10900	10800		
	Manganese (Mn) (mg/kg)	877	978		
	Mercury (Hg) (mg/kg)	0.106	0.060		
	Molybdenum (Mo) (mg/kg)	79.3	106		
	Nickel (Ni) (mg/kg)	514	127		
	Phosphorus (P) (mg/kg)	12900	14100		
	Potassium (K) (mg/kg)	5410	6000		
	Selenium (Se) (mg/kg)	0.39	0.48		
	Silver (Ag) (mg/kg)	14.5	4.36		
	Sodium (Na) (mg/kg)	14200	15500		
	Strontium (Sr) (mg/kg)	303	302		
	Sulfur (S) (mg/kg)	14200	16400		
	Thallium (Tl) (mg/kg)	0.095	0.096		
	Tin (Sn) (mg/kg)	146	116		
	Titanium (Ti) (mg/kg)	699	534		
	Tungsten (W) (mg/kg)	9.96	5.93		
	Uranium (U) (mg/kg)	6.71	6.90		
	Vanadium (V) (mg/kg)	66.8	62.5		
	Zinc (Zn) (mg/kg)	6230	4820		
	Zirconium (Zr) (mg/kg)	2.0	2.0		

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2073419-1	L2073419-2	L2073419-3	L2073419-4	L2073419-5
		Description	soil	soil	soil	soil	soil
		Sampled Date	21-MAR-18	21-MAR-18	21-MAR-18	21-MAR-18	21-MAR-18
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1812-A-1	BA1812-A-2	BA1812-A-3	BA1812-A-4	BA1812-A-5
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.52	11.51	11.49	11.55	11.49
	2nd Preliminary pH (pH)		9.66	9.59	8.85	9.03	8.93
	Final pH (pH)		5.83	5.81	5.92	5.78	5.69
	Extraction Solution Initial pH (pH)		2.80	2.88	2.88	2.88	2.88
	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)		2.72	2.76	2.47	2.61	3.06
	Cadmium (Cd)-Leachable (mg/L)		0.201	0.340	0.143	0.174	0.202
	Calcium (Ca)-Leachable (mg/L)		1890	1960	1940	2000	1930
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.376	0.462	0.459	0.403	0.273
	Copper (Cu)-Leachable (mg/L)		0.735	1.53	1.37	1.26	1.07
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)		<0.25	0.29	<0.25	0.25	0.31
	Magnesium (Mg)-Leachable (mg/L)		116	117	115	120	117
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.47	0.64	0.70	0.56	0.45
	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)		93.3	40.2	59.1	40.2	69.6

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2073419-6	L2073419-7	L2073419-8	L2073419-9	L2073419-10
		Description	soil	soil	soil	soil	soil
		Sampled Date	21-MAR-18	21-MAR-18	21-MAR-18	21-MAR-18	21-MAR-18
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1812-A-6	BA1812-A-7	BA1812-A-8	BA1812-A-9	BA1812-A-10
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.42	11.55	11.48	11.38	11.44
	2nd Preliminary pH (pH)		8.97	9.10	9.03	9.09	9.00
	Final pH (pH)		5.64	5.63	5.91	5.82	5.94
	Extraction Solution Initial pH (pH)		2.88	2.88	2.88	2.88	2.88
	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)		2.67	2.83	2.78	2.69	4.06
	Cadmium (Cd)-Leachable (mg/L)		0.338	0.296	0.213	0.255	0.206
	Calcium (Ca)-Leachable (mg/L)		1880	1780	1960	1920	1920
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.282	0.307	0.745	0.558	0.294
	Copper (Cu)-Leachable (mg/L)		1.12	1.34	1.06	2.78	0.716
	Iron (Fe)-Leachable (mg/L)		6.9	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)		0.33	<0.25	0.27	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		112	110	123	117	122
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.67	0.48	0.43	1.57	0.42
	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)		130	93.9	42.9	50.5	68.1

* 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	L2073419-11 soil 21-MAR-18 09:00 BA1812-A-11	L2073419-12 soil 21-MAR-18 09:00 BA1812-A-12		
Grouping	Analyte				
SOIL					
TCLP Metals	1st Preliminary pH (pH)	11.54	11.50		
	2nd Preliminary pH (pH)	9.04	9.04		
	Final pH (pH)	5.80	5.79		
	Extraction Solution Initial pH (pH)	2.88	2.88		
	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)	2.81	2.70		
	Cadmium (Cd)-Leachable (mg/L)	0.192	0.238		
	Calcium (Ca)-Leachable (mg/L)	1890	1950		
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25		
	Cobalt (Co)-Leachable (mg/L)	0.226	0.550		
	Copper (Cu)-Leachable (mg/L)	0.214	1.14		
	Iron (Fe)-Leachable (mg/L)	<5.0	<5.0		
	Lead (Pb)-Leachable (mg/L)	0.27	0.29		
	Magnesium (Mg)-Leachable (mg/L)	122	121		
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010		
	Nickel (Ni)-Leachable (mg/L)	0.61	0.52		
	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)	45.8	49.6		

* 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	Cobalt (Co)	DUP-H	L2073419-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Copper (Cu)	DUP-H	L2073419-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Lead (Pb)	DUP-H	L2073419-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Molybdenum (Mo)	DUP-H	L2073419-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Tungsten (W)	DUP-H	L2073419-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2073419-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2073419-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2073419-1, -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**
AG-200.2-A-CCMS-VA	Soil	Elevated Ag in Soil by CRC ICPMS	EPA 200.2/6020A
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. Analysis is by Collision/Reaction Cell ICPMS.			
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.



L2073419-COFC

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		<input type="radio"/> Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT	
Address: 5150 Riverbend Drive Burnaby BC		Email 1: smckinney@covanta.com		<input type="radio"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT	
Phone: 604-521-1025 Fax: <input type="checkbox"/> Yes <input type="checkbox"/> No		Email 2: rjohnson4@covanta.com		<input type="radio"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT	
		Email 3: dskrypnik@covanta.com		Analysis Request	
		brent.kirkpatrick@metrovancover.org			
		Sarah.Wellman@metrovancover.org			

Invoice To Same as Report ?		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:															

Lab Work Order # (lab use only)		ALS Contact:	Sampler:													
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
	BA1812-A-1	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-2	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-3	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-4	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-5	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-6	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-7	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-8	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-9	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-10	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-11	21-Mar-18	9:00	Soil	X	X		X								1
	BA1812-A-12	21-Mar-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): 28-MAR-18	Time (hh-mm): 08:00	Received by: JC	Date: 3/28/18	Time: 11:40 AM	Temperature: 22 °C	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF