

Bottom Ash Data

2018 Week 8

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on March 7, 2018. The data represents bottom ash composite results for week 8 of 2018 (February 18, 2018 to February 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: 27-FEB-18
Report Date: 05-MAR-18 17:28 (MT)
Version: FINAL

Client Phone: 604-521-1025

Certificate of Analysis

Lab Work Order #: L2061187
Project P.O. #: VANCO-0000040506
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		L2061187-1 SOIL 21-FEB-18 09:00 BA1808-A-1	L2061187-2 SOIL 21-FEB-18 09:00 BA1808-A-2	L2061187-3 SOIL 21-FEB-18 09:00 BA1808-A-3	L2061187-4 SOIL 21-FEB-18 09:00 BA1808-A-4	L2061187-5 SOIL 21-FEB-18 09:00 BA1808-A-5
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	22.6	20.9	20.3	23.6	22.8
	pH (1:2 soil:water) (pH)	11.64	11.62	11.22	11.19	11.48
Metals	Aluminum (Al) (mg/kg)	32900	34200	26300	34100	31600
	Antimony (Sb) (mg/kg)	142	133	164	124	116
	Arsenic (As) (mg/kg)	19.6	24.5	25.5	20.8	21.2
	Barium (Ba) (mg/kg)	598	536	364	433	448
	Beryllium (Be) (mg/kg)	0.41	0.41	0.42	0.40	0.41
	Bismuth (Bi) (mg/kg)	5.82	6.39	7.95	10.3	9.69
	Boron (B) (mg/kg)	257	281	244	294	817
	Cadmium (Cd) (mg/kg)	9.33	11.8	11.5	8.78	9.12
	Calcium (Ca) (mg/kg)	126000	139000	149000	143000	145000
	Chromium (Cr) (mg/kg)	138	145	183	253	319
	Cobalt (Co) (mg/kg)	38.5	44.6	39.8	30.6	65.8
	Copper (Cu) (mg/kg)	3680	1840	1720	1450	1710
	Iron (Fe) (mg/kg)	78600	66000	47700	55200	48700
	Lead (Pb) (mg/kg)	1540	696	404	421	306
	Lithium (Li) (mg/kg)	14.6	21.4	15.1	14.7	22.4
	Magnesium (Mg) (mg/kg)	10600	10200	10000	10200	9490
	Manganese (Mn) (mg/kg)	747	718	671	942	718
	Mercury (Hg) (mg/kg)	0.171	0.080	0.133	0.071	<0.050
	Molybdenum (Mo) (mg/kg)	88.0	73.1	93.0	89.6	108
	Nickel (Ni) (mg/kg)	184	133	156	145	110
	Phosphorus (P) (mg/kg)	9880	11000	12100	11300	10100
	Potassium (K) (mg/kg)	5130	5640	5730	5640	5620
	Selenium (Se) (mg/kg)	0.32	0.34	0.33	0.33	0.36
	Silver (Ag) (mg/kg)	4.01	4.16	24.3	6.11	16.4
	Sodium (Na) (mg/kg)	14300	15500	15400	15400	15800
	Strontium (Sr) (mg/kg)	317	358	370	350	378
	Sulfur (S) (mg/kg)	13000	13800	15100	13700	14800
	Thallium (Tl) (mg/kg)	0.063	0.070	0.077	0.065	0.061
	Tin (Sn) (mg/kg)	173	225	199	126	112
	Titanium (Ti) (mg/kg)	1140	838	310	623	698
	Tungsten (W) (mg/kg)	7.27	6.77	7.25	8.74	7.71
	Uranium (U) (mg/kg)	4.49	5.03	5.91	5.02	5.11
	Vanadium (V) (mg/kg)	43.4	45.1	52.4	48.0	46.0
	Zinc (Zn) (mg/kg)	3080	3170	6030	3020	2840
	Zirconium (Zr) (mg/kg)	1.4	6.5	1.9	1.7	1.6

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2061187-6	L2061187-7	L2061187-8	L2061187-9	L2061187-10
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	21-FEB-18	21-FEB-18	21-FEB-18	21-FEB-18	21-FEB-18
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1808-A-6	BA1808-A-7	BA1808-A-8	BA1808-A-9	BA1808-A-10
Grouping	Analyte						
SOIL							
Physical Tests	Moisture (%)		23.3	22.0	22.3	23.2	24.8
	pH (1:2 soil:water) (pH)		11.19	11.68	11.48	11.56	11.58
Metals	Aluminum (Al) (mg/kg)		30100	32000	31200	41400	30400
	Antimony (Sb) (mg/kg)		132	121	135	127	130
	Arsenic (As) (mg/kg)		22.6	20.9	19.7	20.9	36.2
	Barium (Ba) (mg/kg)		496	455	513	595	429
	Beryllium (Be) (mg/kg)		0.41	0.40	0.43	2.11	0.41
	Bismuth (Bi) (mg/kg)		8.04	7.63	5.39	6.06	7.33
	Boron (B) (mg/kg)		281	296	363	294	296
	Cadmium (Cd) (mg/kg)		9.72	11.8	9.24	22.1	11.0
	Calcium (Ca) (mg/kg)		143000	147000	137000	132000	139000
	Chromium (Cr) (mg/kg)		268	137	155	131	137
	Cobalt (Co) (mg/kg)		116	36.3	55.1	25.8	143
	Copper (Cu) (mg/kg)		6210	6660	3080	2110	1740
	Iron (Fe) (mg/kg)		54600	48200	60500	62000	66900
	Lead (Pb) (mg/kg)		289	372	332	395	480
	Lithium (Li) (mg/kg)		15.5	17.7	14.9	17.6	16.5
	Magnesium (Mg) (mg/kg)		10600	10400	10900	12300	10000
	Manganese (Mn) (mg/kg)		978	807	666	723	842
	Mercury (Hg) (mg/kg)		0.095	<0.050	0.111	0.081	0.066
	Molybdenum (Mo) (mg/kg)		85.3	77.8	297	70.8	101
	Nickel (Ni) (mg/kg)		147	179	152	141	385
	Phosphorus (P) (mg/kg)		10900	12500	11100	10000	10800
	Potassium (K) (mg/kg)		5720	5790	5370	5540	5660
	Selenium (Se) (mg/kg)		0.35	0.33	0.32	0.33	0.36
	Silver (Ag) (mg/kg)		4.97	8.43	4.79	3.90	7.16
	Sodium (Na) (mg/kg)		15600	15200	14700	16200	15200
	Strontium (Sr) (mg/kg)		368	317	334	333	402
	Sulfur (S) (mg/kg)		14100	14000	12600	13100	14800
Thallium (Tl) (mg/kg)		0.068	0.067	0.066	0.065	0.075	
Tin (Sn) (mg/kg)		119	811	118	960	118	
Titanium (Ti) (mg/kg)		557	445	688	1380	825	
Tungsten (W) (mg/kg)		6.84	6.03	6.82	5.71	6.78	
Uranium (U) (mg/kg)		5.22	5.17	4.63	4.75	5.31	
Vanadium (V) (mg/kg)		49.3	45.6	42.1	43.3	43.9	
Zinc (Zn) (mg/kg)		3240	3850	3470	4850	3360	
Zirconium (Zr) (mg/kg)		1.6	1.4	1.3	2.5	1.7	

* 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	L2061187-11 SOIL 21-FEB-18 09:00 BA1808-A-11	L2061187-12 SOIL 21-FEB-18 09:00 BA1808-A-12		
Grouping	Analyte				
SOIL					
Physical Tests	Moisture (%)	24.1	22.2		
	pH (1:2 soil:water) (pH)	11.61	11.31		
Metals	Aluminum (Al) (mg/kg)	36600	45000		
	Antimony (Sb) (mg/kg)	110	108		
	Arsenic (As) (mg/kg)	20.0	37.5		
	Barium (Ba) (mg/kg)	351	478		
	Beryllium (Be) (mg/kg)	0.35	0.44		
	Bismuth (Bi) (mg/kg)	6.40	6.21		
	Boron (B) (mg/kg)	280	356		
	Cadmium (Cd) (mg/kg)	11.2	10.3		
	Calcium (Ca) (mg/kg)	149000	144000		
	Chromium (Cr) (mg/kg)	128	160		
	Cobalt (Co) (mg/kg)	25.2	68.6		
	Copper (Cu) (mg/kg)	2080	1780		
	Iron (Fe) (mg/kg)	46600	52800		
	Lead (Pb) (mg/kg)	777	292		
	Lithium (Li) (mg/kg)	15.6	18.7		
	Magnesium (Mg) (mg/kg)	10600	10500		
	Manganese (Mn) (mg/kg)	653	743		
	Mercury (Hg) (mg/kg)	0.066	0.065		
	Molybdenum (Mo) (mg/kg)	85.5	88.5		
	Nickel (Ni) (mg/kg)	123	90.1		
	Phosphorus (P) (mg/kg)	11900	13200		
	Potassium (K) (mg/kg)	5760	5660		
	Selenium (Se) (mg/kg)	0.37	0.37		
	Silver (Ag) (mg/kg)	4.47	7.53		
	Sodium (Na) (mg/kg)	16100	15800		
	Strontium (Sr) (mg/kg)	407	348		
	Sulfur (S) (mg/kg)	15700	13700		
	Thallium (Tl) (mg/kg)	0.074	0.062		
	Tin (Sn) (mg/kg)	130	128		
	Titanium (Ti) (mg/kg)	427	933		
	Tungsten (W) (mg/kg)	7.51	7.78		
	Uranium (U) (mg/kg)	5.40	5.06		
	Vanadium (V) (mg/kg)	42.8	46.3		
	Zinc (Zn) (mg/kg)	2900	3300		
	Zirconium (Zr) (mg/kg)	3.1	3.1		

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2061187-1	L2061187-2	L2061187-3	L2061187-4	L2061187-5
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	21-FEB-18	21-FEB-18	21-FEB-18	21-FEB-18	21-FEB-18
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1808-A-1	BA1808-A-2	BA1808-A-3	BA1808-A-4	BA1808-A-5
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.52	11.55	11.55	11.51	11.54
	2nd Preliminary pH (pH)		8.99	8.81	8.91	8.93	8.96
	Final pH (pH)		6.48	6.65	5.98	6.40	6.56
	Extraction Solution Initial pH (pH)		2.88	2.88	2.88	2.88	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)		3.66	4.03	3.44	3.41	3.36
	Cadmium (Cd)-Leachable (mg/L)		0.133	0.582	0.141	0.159	0.129
	Calcium (Ca)-Leachable (mg/L)		1970	2040	1950	2050	1980
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		0.547	0.346	0.316	0.642	0.367
	Copper (Cu)-Leachable (mg/L)		0.657	0.442	1.26	0.650	0.775
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		108	117	106	113	110
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.55	0.49	0.49	0.49	0.31
	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)		45.8	41.6	49.3	31.5	25.6

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2061187-6	L2061187-7	L2061187-8	L2061187-9	L2061187-10
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	21-FEB-18	21-FEB-18	21-FEB-18	21-FEB-18	21-FEB-18
		Sampled Time	09:00	09:00	09:00	09:00	09:00
		Client ID	BA1808-A-6	BA1808-A-7	BA1808-A-8	BA1808-A-9	BA1808-A-10
Grouping	Analyte						
SOIL							
TCLP Metals	1st Preliminary pH (pH)		11.48	11.57	11.52	11.78	11.64
	2nd Preliminary pH (pH)		8.74	9.16	8.58	9.40	9.05
	Final pH (pH)		6.31	6.01	6.23	6.24	6.33
	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)		4.37	3.20	3.20	3.36	3.24
	Cadmium (Cd)-Leachable (mg/L)		0.127	0.122	0.138	0.118	0.148
	Calcium (Ca)-Leachable (mg/L)		1920	1910	1950	1930	2010
	Chromium (Cr)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Cobalt (Co)-Leachable (mg/L)		1.38	0.318	0.198	0.532	0.409
	Copper (Cu)-Leachable (mg/L)		1.04	3.47	11.5	0.736	0.576
	Iron (Fe)-Leachable (mg/L)		<5.0	<5.0	<5.0	<5.0	<5.0
	Lead (Pb)-Leachable (mg/L)		<0.25	<0.25	<0.25	<0.25	<0.25
	Magnesium (Mg)-Leachable (mg/L)		117	101	108	106	111
	Mercury (Hg)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Nickel (Ni)-Leachable (mg/L)		0.44	0.38	0.38	0.36	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)		27.8	76.3	35.5	29.5	35.1

* 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	L2061187-11 SOIL 21-FEB-18 09:00 BA1808-A-11	L2061187-12 SOIL 21-FEB-18 09:00 BA1808-A-12		
Grouping	Analyte				
SOIL					
TCLP Metals	1st Preliminary pH (pH)	11.72	11.68		
	2nd Preliminary pH (pH)	9.64	9.01		
	Final pH (pH)	6.53	6.10		
	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)	3.43	3.32		
	Cadmium (Cd)-Leachable (mg/L)	0.446	0.219		
	Calcium (Ca)-Leachable (mg/L)	2010	1970		
	Chromium (Cr)-Leachable (mg/L)	<0.25	<0.25		
	Cobalt (Co)-Leachable (mg/L)	0.402	0.600		
	Copper (Cu)-Leachable (mg/L)	0.732	1.56		
	Iron (Fe)-Leachable (mg/L)	<5.0	<5.0		
	Lead (Pb)-Leachable (mg/L)	<0.25	<0.25		
	Magnesium (Mg)-Leachable (mg/L)	114	114		
	Mercury (Hg)-Leachable (mg/L)	<0.0010	<0.0010		
	Nickel (Ni)-Leachable (mg/L)	0.83	0.36		
	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)	22.0	31.2		

* 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	Mercury (Hg)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Bismuth (Bi)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Cobalt (Co)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Copper (Cu)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Lead (Pb)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Silver (Ag)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Titanium (Ti)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Zinc (Zn)	DUP-H	L2061187-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2061187-1, -2, -3, -4
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2061187-10, -11, -12, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2061187-1, -2, -3, -4
Matrix Spike	Cobalt (Co)-Leachable	MS-B	L2061187-10, -11, -12, -5, -6, -7, -8, -9
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2061187-1, -2, -3, -4
Matrix Spike	Zinc (Zn)-Leachable	MS-B	L2061187-10, -11, -12, -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

Reference Information

Chain of Custody Numbers:

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.



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 Skrypnyk	<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:	rjohnson4@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:	dskrypnyk@covanta.com		<input type="radio"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT	
			brent.kirkpatrick@metrovancover.org		Analysis Request	
			Sarah.Wellman@metrovancover.org			

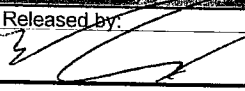
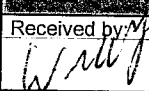
Invoice To		Client / Project Information		Please indicate below Filtered, Preserved or both (F, P, F/P)													
Same as Report? <input type="checkbox"/> Yes <input type="checkbox"/> No		Job #:															
Hardcopy of Invoice with Report? <input type="checkbox"/> Yes <input type="checkbox"/> No		PO / AFE: PO# 46693 Weekly Bottom Ash - Suite															
Company:		LSD: (includes 2:1 pH)															
Contact:		Quote #:															
Address:		ALS Contact:															
Phone:		Sampler:															
 L2061187-COFC		Date		Time		Sample Type		MET-TCLP-VA (all metals, Hg)		MOISTURE		Chrome 6		MET-CSR+FULL-VA (all metals)		Number of Containers	
(This description will appear on the report)		(dd-mmm-yy)		(hh:mm)													
BA1808-A-1		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-2		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-3		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-4		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-5		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-6		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-7		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-8		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-9		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-10		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-11		21-Feb-18		9:00		Soil		X X				X		1			
BA1808-A-12		21-Feb-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 user 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:
	27-Feb-18	08:00		Feb 27	11:00	23.6 °C				Yes / No ? If Yes add SIF