

Bottom Ash Data

2023 Week 42

The following analytical report represents bottom ash composite results for week 42 of 2023 (October 15, 2023 to October 21, 2023).

The bottom ash meets the conditions of Metro Vancouver's 2020 Bottom Ash Management Plan and is suitable for disposal.



CERTIFICATE OF ANALYSIS

Work Order : **VA23C5710**
Client : **Covanta Burnaby Renewable Energy, ULC**
Contact : Nicole Victor
Address : 5150 Riverbend Drive
 Burnaby BC Canada V3N 4V3
Telephone : ----
Project : Weekly Bottom Ash - Suite
PO : VANCO0000051998
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : Standing Offer (BC work)
No. of samples received : 12
No. of samples analysed : 12

Page : 1 of 11
Laboratory : ALS Environmental - Vancouver
Account Manager : Ian Chen
Address : 8081 Lougheed Highway
 Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 25-Oct-2023 11:50
Date Analysis Commenced : 28-Oct-2023
Issue Date : 08-Nov-2023 09:23

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Ghazaleh Khanmirzaei	Analsyt	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
%	percent
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior 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.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2342-A-1	BA2342-A-2	BA2342-A-3	BA2342-A-4	BA2342-A-5
Client sampling date / time					18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-001	VA23C5710-002	VA23C5710-003	VA23C5710-004	VA23C5710-005
					Result	Result	Result	Result	Result
Physical Tests									
Moisture	----	E144/VA	0.25	%	26.0	25.7	23.8	26.8	25.3
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	10.4	10.3	10.4	10.4	10.5
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	38800	42100	38500	32200	39100
Antimony	7440-36-0	E440/VA	0.10	mg/kg	132	123	130	133	125
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	28.3	20.9	23.5	22.0	18.9
Barium	7440-39-3	E440/VA	0.50	mg/kg	475	402	357	415	522
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.34	0.33	0.34	0.32	0.32
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	9.79	8.90	10.3	10.5	43.5
Boron	7440-42-8	E440/VA	5.0	mg/kg	220	180	217	196	179
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	11.9	13.5	12.1	10.6	11.5
Calcium	7440-70-2	E440/VA	50	mg/kg	155000	148000	159000	174000	151000
Chromium	7440-47-3	E440/VA	0.50	mg/kg	150	553	137	406	190
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	66.0	83.5	88.3	81.0	41.7
Copper	7440-50-8	E440/VA	0.50	mg/kg	8390	2170	1490	1860	2730
Iron	7439-89-6	E440/VA	50	mg/kg	61700	49800	52400	55600	52900
Lead	7439-92-1	E440/VA	0.50	mg/kg	319	334	316	362	288
Lithium	7439-93-2	E440/VA	2.0	mg/kg	28.6	32.2	35.8	31.3	29.2
Magnesium	7439-95-4	E440/VA	20	mg/kg	12300	11400	12100	12600	11400
Manganese	7439-96-5	E440/VA	1.0	mg/kg	862	1120	812	894	708
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.144	0.0532	0.0910	0.0742	0.0843
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	23.5	110	16.5	20.2	15.4
Nickel	7440-02-0	E440/VA	0.50	mg/kg	169	547	133	155	213
Phosphorus	7723-14-0	E440/VA	50	mg/kg	10100	10600	12400	11800	10400
Potassium	7440-09-7	E440/VA	100	mg/kg	7390	7410	7500	7240	7020
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.36	0.43	0.38	0.45	0.38
Silver	7440-22-4	E440/VA	0.10	mg/kg	16.8	>60.6	4.62	7.44	3.99
Sodium	7440-23-5	E440/VA	50	mg/kg	19700	19100	18900	18900	18500
Strontium	7440-24-6	E440/VA	0.50	mg/kg	273	281	293	409	263



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2342-A-1	BA2342-A-2	BA2342-A-3	BA2342-A-4	BA2342-A-5
(Matrix: Soil/Solid)					Client sampling date / time	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-001	VA23C5710-002	VA23C5710-003	VA23C5710-004	VA23C5710-005	
					Result	Result	Result	Result	Result	
Metals										
Sulfur	7704-34-9	E440/VA	1000	mg/kg	15400	14500	16400	15800	13800	
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	
Tin	7440-31-5	E440/VA	2.0	mg/kg	122	128	178	125	322	
Titanium	7440-32-6	E440/VA	1.0	mg/kg	287	329	221	252	296	
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	7.81	10.1	11.7	9.21	11.3	
Uranium	7440-61-1	E440/VA	0.050	mg/kg	3.36	3.36	3.63	3.53	3.35	
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	44.6	46.4	44.8	46.0	40.2	
Zinc	7440-66-6	E440/VA	2.0	mg/kg	4060	4080	4040	3950	3830	
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	2.3	3.2	3.2	2.2	2.2	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	11.4	11.4	11.3	11.3	11.3	
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	5.23	5.40	3.80	3.87	3.87	
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.85	2.85	4.90	4.90	4.90	
pH, TCLP final	----	EPP444/VA	0.010	pH units	6.63	6.74	9.34	9.38	9.41	
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00	
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L	<2.5	<2.5	<2.5	<2.5	<2.5	
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025	
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L	1.89	2.04	0.89	0.91	0.93	
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	0.100	0.148	<0.050	<0.050	<0.050	
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	2300	2360	957	964	984	
Chromium, TCLP	7440-47-3	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
Cobalt, TCLP	7440-48-4	E444/VA	0.050	mg/L	0.702	0.535	<0.050	<0.050	<0.050	
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	0.909	0.934	0.753	0.907	0.916	
Iron, TCLP	7439-89-6	E444/VA	5.0	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
Lead, TCLP	7439-92-1	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
Magnesium, TCLP	7439-95-4	E444/VA	2.5	mg/L	108	112	14.3	12.4	15.1	
Mercury, TCLP	7439-97-6	E512/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Nickel, TCLP	7440-02-0	E444/VA	0.25	mg/L	0.41	0.40	<0.25	<0.25	<0.25	
Selenium, TCLP	7782-49-2	E444/VA	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2342-A-1	BA2342-A-2	BA2342-A-3	BA2342-A-4	BA2342-A-5
Client sampling date / time					18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-001	VA23C5710-002	VA23C5710-003	VA23C5710-004	VA23C5710-005	
					Result	Result	Result	Result	Result	
TCLP Metals										
Silver, TCLP	7440-22-4	E444/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Thallium, TCLP	7440-28-0	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium, TCLP	7440-61-1	E444/VA	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vanadium, TCLP	7440-62-2	E444/VA	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L	19.5	18.3	<0.50	<0.50	<0.50	<0.50
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L	<10	<10	<10	<10	<10	<10

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2342-A-6	BA2342-A-7	BA2342-A-8	BA2342-A-9	BA2342-A-10
Client sampling date / time					18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-006	VA23C5710-007	VA23C5710-008	VA23C5710-009	VA23C5710-010
					Result	Result	Result	Result	Result
Physical Tests									
Moisture	---	E144/VA	0.25	%	25.0	25.6	25.8	23.3	24.5
pH (1:2 soil:water)	---	E108/VA	0.10	pH units	10.3	10.5	10.6	11.0	10.8
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	34000	43000	35000	30900	31700
Antimony	7440-36-0	E440/VA	0.10	mg/kg	140	128	105	88.6	112
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	21.0	20.7	16.6	14.4	13.0
Barium	7440-39-3	E440/VA	0.50	mg/kg	440	582	450	439	445
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.30	0.38	0.31	0.70	0.27
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	10.3	9.10	7.87	7.23	7.74
Boron	7440-42-8	E440/VA	5.0	mg/kg	285	213	212	212	151
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	9.73	9.55	9.31	7.90	6.99
Calcium	7440-70-2	E440/VA	50	mg/kg	149000	171000	137000	122000	128000
Chromium	7440-47-3	E440/VA	0.50	mg/kg	175	136	149	174	101
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	152	37.0	95.4	32.6	28.2
Copper	7440-50-8	E440/VA	0.50	mg/kg	16700	1260	1430	1220	1540
Iron	7439-89-6	E440/VA	50	mg/kg	57100	39300	48700	65600	36400
Lead	7439-92-1	E440/VA	0.50	mg/kg	274	253	2130	236	248
Lithium	7439-93-2	E440/VA	2.0	mg/kg	32.6	28.6	26.9	19.9	20.3
Magnesium	7439-95-4	E440/VA	20	mg/kg	11400	12500	10200	9600	10300
Manganese	7439-96-5	E440/VA	1.0	mg/kg	802	807	677	704	485
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.0549	0.0557	0.0596	<0.0500	0.0619
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	26.7	16.6	22.5	22.0	12.5
Nickel	7440-02-0	E440/VA	0.50	mg/kg	711	125	177	243	152
Phosphorus	7723-14-0	E440/VA	50	mg/kg	11200	14400	8680	7640	7050
Potassium	7440-09-7	E440/VA	100	mg/kg	7190	8160	5840	5450	4810
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.40	0.37	0.35	0.30	0.28
Silver	7440-22-4	E440/VA	0.10	mg/kg	11.6	3.60	4.32	2.98	4.75
Sodium	7440-23-5	E440/VA	50	mg/kg	18900	19400	15100	15800	13500
Strontium	7440-24-6	E440/VA	0.50	mg/kg	268	312	516	254	269
Sulfur	7704-34-9	E440/VA	1000	mg/kg	14500	16200	12600	11600	10100



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2342-A-6	BA2342-A-7	BA2342-A-8	BA2342-A-9	BA2342-A-10
Client sampling date / time					18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-006	VA23C5710-007	VA23C5710-008	VA23C5710-009	VA23C5710-010
					Result	Result	Result	Result	Result
Metals									
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	0.056	<0.050	<0.050	<0.050
Tin	7440-31-5	E440/VA	2.0	mg/kg	437	104	157	84.3	71.4
Titanium	7440-32-6	E440/VA	1.0	mg/kg	302	352	312	333	303
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	8.12	8.26	7.11	5.78	4.69
Uranium	7440-61-1	E440/VA	0.050	mg/kg	3.29	3.77	3.04	2.60	2.71
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	42.6	41.8	34.6	37.2	31.2
Zinc	7440-66-6	E440/VA	2.0	mg/kg	3930	7440	3740	4810	2510
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	1.7	1.9	2.0	1.4	1.5
TCLP Metals									
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	11.3	11.5	11.6	11.7	11.7
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	4.01	6.02	5.60	6.41	6.26
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	4.90	2.85	2.85	2.85	2.85
pH, TCLP final	----	EPP444/VA	0.010	pH units	9.35	6.73	6.95	6.75	6.96
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L	<2.5	<2.5	<2.5	<2.5	<2.5
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L	0.93	1.98	2.32	2.06	2.10
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	<0.050	0.125	0.100	0.151	0.079
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	988	2380	2470	2390	2390
Chromium, TCLP	7440-47-3	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25
Cobalt, TCLP	7440-48-4	E444/VA	0.050	mg/L	<0.050	0.908	0.594	1.54	0.615
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	0.789	0.759	0.694	0.823	0.782
Iron, TCLP	7439-89-6	E444/VA	5.0	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Lead, TCLP	7439-92-1	E444/VA	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25
Magnesium, TCLP	7439-95-4	E444/VA	2.5	mg/L	15.4	118	112	114	115
Mercury, TCLP	7439-97-6	E512/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel, TCLP	7440-02-0	E444/VA	0.25	mg/L	<0.25	0.34	0.31	0.34	0.25
Selenium, TCLP	7782-49-2	E444/VA	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
Silver, TCLP	7440-22-4	E444/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2342-A-6	BA2342-A-7	BA2342-A-8	BA2342-A-9	BA2342-A-10
Client sampling date / time					18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00	18-Oct-2023 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-006	VA23C5710-007	VA23C5710-008	VA23C5710-009	VA23C5710-010
					Result	Result	Result	Result	Result
TCLP Metals									
Thallium, TCLP	7440-28-0	E444/VA	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium, TCLP	7440-61-1	E444/VA	0.20	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Vanadium, TCLP	7440-62-2	E444/VA	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L	<0.50	11.4	8.38	16.0	7.27
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L	<10	<10	<10	<10	<10

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2342-A-11	BA2342-A-12	----	----	----
Client sampling date / time					18-Oct-2023 09:00	18-Oct-2023 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-011	VA23C5710-012	-----	-----	-----
					Result	Result	---	---	---
Physical Tests									
Moisture	---	E144/VA	0.25	%	25.3	25.1	---	---	---
pH (1:2 soil:water)	---	E108/VA	0.10	pH units	10.8	10.7	---	---	---
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	34400	45500	---	---	---
Antimony	7440-36-0	E440/VA	0.10	mg/kg	161	117	---	---	---
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	13.1	16.1	---	---	---
Barium	7440-39-3	E440/VA	0.50	mg/kg	393	475	---	---	---
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.25	0.31	---	---	---
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	10.7	7.82	---	---	---
Boron	7440-42-8	E440/VA	5.0	mg/kg	156	225	---	---	---
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	7.33	7.89	---	---	---
Calcium	7440-70-2	E440/VA	50	mg/kg	120000	135000	---	---	---
Chromium	7440-47-3	E440/VA	0.50	mg/kg	140	141	---	---	---
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	132	292	---	---	---
Copper	7440-50-8	E440/VA	0.50	mg/kg	19100	5140	---	---	---
Iron	7439-89-6	E440/VA	50	mg/kg	57200	62000	---	---	---
Lead	7439-92-1	E440/VA	0.50	mg/kg	180	328	---	---	---
Lithium	7439-93-2	E440/VA	2.0	mg/kg	21.0	22.8	---	---	---
Magnesium	7439-95-4	E440/VA	20	mg/kg	9220	9480	---	---	---
Manganese	7439-96-5	E440/VA	1.0	mg/kg	1030	1020	---	---	---
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	<0.0500	<0.0500	---	---	---
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	13.2	14.5	---	---	---
Nickel	7440-02-0	E440/VA	0.50	mg/kg	225	103	---	---	---
Phosphorus	7723-14-0	E440/VA	50	mg/kg	7650	9080	---	---	---
Potassium	7440-09-7	E440/VA	100	mg/kg	4690	5210	---	---	---
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.22	0.35	---	---	---
Silver	7440-22-4	E440/VA	0.10	mg/kg	2.98	3.26	---	---	---
Sodium	7440-23-5	E440/VA	50	mg/kg	13600	14700	---	---	---
Strontium	7440-24-6	E440/VA	0.50	mg/kg	475	258	---	---	---
Sulfur	7704-34-9	E440/VA	1000	mg/kg	9600	11800	---	---	---



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2342-A-11	BA2342-A-12	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time	18-Oct-2023 09:00	18-Oct-2023 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-011	VA23C5710-012	-----	-----	-----	
					Result	Result	---	---	---	
Metals										
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	<0.050	---	---	---	
Tin	7440-31-5	E440/VA	2.0	mg/kg	80.2	252	---	---	---	
Titanium	7440-32-6	E440/VA	1.0	mg/kg	263	421	---	---	---	
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	4.01	6.58	---	---	---	
Uranium	7440-61-1	E440/VA	0.050	mg/kg	2.42	2.83	---	---	---	
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	38.9	38.9	---	---	---	
Zinc	7440-66-6	E440/VA	2.0	mg/kg	3560	3330	---	---	---	
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	2.1	2.8	---	---	---	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	11.8	11.7	---	---	---	
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	6.78	6.37	---	---	---	
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.85	2.85	---	---	---	
pH, TCLP final	----	EPP444/VA	0.010	pH units	7.18	8.21	---	---	---	
Antimony, TCLP	7440-36-0	E444/VA	1.00	mg/L	<1.00	<1.00	---	---	---	
Arsenic, TCLP	7440-38-2	E444/VA	1.0	mg/L	<1.0	<1.0	---	---	---	
Barium, TCLP	7440-39-3	E444/VA	2.5	mg/L	<2.5	<2.5	---	---	---	
Beryllium, TCLP	7440-41-7	E444/VA	0.025	mg/L	<0.025	<0.025	---	---	---	
Boron, TCLP	7440-42-8	E444/VA	0.50	mg/L	2.03	1.58	---	---	---	
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	0.062	<0.050	---	---	---	
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	2400	1870	---	---	---	
Chromium, TCLP	7440-47-3	E444/VA	0.25	mg/L	<0.25	<0.25	---	---	---	
Cobalt, TCLP	7440-48-4	E444/VA	0.050	mg/L	0.446	<0.050	---	---	---	
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	0.687	0.581	---	---	---	
Iron, TCLP	7439-89-6	E444/VA	5.0	mg/L	<5.0	<5.0	---	---	---	
Lead, TCLP	7439-92-1	E444/VA	0.25	mg/L	<0.25	<0.25	---	---	---	
Magnesium, TCLP	7439-95-4	E444/VA	2.5	mg/L	111	77.9	---	---	---	
Mercury, TCLP	7439-97-6	E512/VA	0.0010	mg/L	<0.0010	<0.0010	---	---	---	
Nickel, TCLP	7440-02-0	E444/VA	0.25	mg/L	<0.25	<0.25	---	---	---	
Selenium, TCLP	7782-49-2	E444/VA	0.10	mg/L	<0.10	<0.10	---	---	---	
Silver, TCLP	7440-22-4	E444/VA	0.050	mg/L	<0.050	<0.050	---	---	---	



Analytical Results

Sub-Matrix: Soil					Client sample ID		BA2342-A-11	BA2342-A-12	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time		18-Oct-2023 09:00	18-Oct-2023 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23C5710-011	VA23C5710-012	-----	-----	-----	-----	-----
TCLP Metals					Result	Result	---	---	---	---	---
Thallium, TCLP	7440-28-0	E444/VA	1.0	mg/L	<1.0	<1.0	---	---	---	---	---
Uranium, TCLP	7440-61-1	E444/VA	0.20	mg/L	<0.20	<0.20	---	---	---	---	---
Vanadium, TCLP	7440-62-2	E444/VA	0.15	mg/L	<0.15	<0.15	---	---	---	---	---
Zinc, TCLP	7440-66-6	E444/VA	0.50	mg/L	3.39	<0.50	---	---	---	---	---
Zirconium, TCLP	7440-67-7	E444/VA	10	mg/L	<10	<10	---	---	---	---	---

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA23C5710</p> <p>Client : Covanta Burnaby Renewable Energy, ULC</p> <p>Contact : Nicole Victor</p> <p>Address : 5150 Riverbend Drive Burnaby BC Canada V3N 4V3</p> <p>Telephone : ----</p> <p>Project : Weekly Bottom Ash - Suite</p> <p>PO : VANCO0000051998</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : Standing Offer (BC work)</p> <p>No. of samples received : 12</p> <p>No. of samples analysed : 12</p>	<p>Page : 1 of 16</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Ian Chen</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 25-Oct-2023 11:50</p> <p>Issue Date : 08-Nov-2023 09:23</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	Anonymous	Anonymous	Molybdenum	7439-98-7	E440	48.2 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.

Laboratory Control Sample (LCS) Recoveries								
Metals	QC-MRG2-1212315 002	----	Silver	7440-22-4	E440	79.1 % MES	80.0-120%	Recovery less than lower control limit

Result Qualifiers

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2342-A-1	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2342-A-10	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2342-A-11	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2342-A-12	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2342-A-2	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2342-A-3	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2342-A-4	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag BA2342-A-5	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag BA2342-A-6	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag BA2342-A-7	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag BA2342-A-8	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
LDPE bag BA2342-A-9	E510	18-Oct-2023	31-Oct-2023	28 days	13 days	✔	01-Nov-2023	28 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-1	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-10	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-11	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-12	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-2	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-3	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-4	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-5	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-6	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-7	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-8	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2342-A-9	E440	18-Oct-2023	31-Oct-2023	180 days	13 days	✔	01-Nov-2023	180 days	14 days	✔	
Physical Tests : Moisture Content by Gravimetry											
LDPE bag BA2342-A-1	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-10	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-11	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-12	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-2	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-3	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-4	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-5	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-6	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-7	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-8	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2342-A-9	E144	18-Oct-2023	----	----	----		29-Oct-2023	----	11 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2342-A-1	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2342-A-10	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2342-A-11	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2342-A-12	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2342-A-2	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2342-A-3	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2342-A-4	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag BA2342-A-5	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag BA2342-A-6	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag BA2342-A-7	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag BA2342-A-8	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
LDPE bag BA2342-A-9	E108	18-Oct-2023	31-Oct-2023	30 days	13 days	✔	01-Nov-2023	30 days	14 days	✔	
TCLP Metals : Mercury by CVAAS (TCLP)											
Glass vial - total (lab preserved) BA2342-A-1	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔	
TCLP Metals : Mercury by CVAAS (TCLP)											
Glass vial - total (lab preserved) BA2342-A-10	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔	
TCLP Metals : Mercury by CVAAS (TCLP)											
Glass vial - total (lab preserved) BA2342-A-11	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔	
TCLP Metals : Mercury by CVAAS (TCLP)											
Glass vial - total (lab preserved) BA2342-A-12	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-2	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-7	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-8	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-9	E512	28-Oct-2023	01-Nov-2023	38 days	14 days	✔	01-Nov-2023	38 days	14 days	✔
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-3	E512	01-Nov-2023	04-Nov-2023	42 days	17 days	✔	04-Nov-2023	42 days	17 days	✔
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-4	E512	01-Nov-2023	04-Nov-2023	42 days	17 days	✔	04-Nov-2023	42 days	17 days	✔
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-5	E512	01-Nov-2023	04-Nov-2023	42 days	17 days	✔	04-Nov-2023	42 days	17 days	✔
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2342-A-6	E512	01-Nov-2023	04-Nov-2023	42 days	17 days	✔	04-Nov-2023	42 days	17 days	✔
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2342-A-1	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-10	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-11	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-12	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-2	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-7	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-8	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-9	E444	28-Oct-2023	01-Nov-2023	190 days	14 days	✔	02-Nov-2023	190 days	15 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-3	E444	01-Nov-2023	04-Nov-2023	194 days	17 days	✔	05-Nov-2023	194 days	18 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-4	E444	01-Nov-2023	04-Nov-2023	194 days	17 days	✔	05-Nov-2023	194 days	18 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-5	E444	01-Nov-2023	04-Nov-2023	194 days	17 days	✔	05-Nov-2023	194 days	18 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2342-A-6	E444	01-Nov-2023	04-Nov-2023	194 days	17 days	✔	05-Nov-2023	194 days	18 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-1	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-10	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-11	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-12	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-2	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-7	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-8	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-9	EPP444	18-Oct-2023	28-Oct-2023	----	----		----	28 days	10 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-3	EPP444	18-Oct-2023	01-Nov-2023	----	----		----	28 days	14 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-4	EPP444	18-Oct-2023	01-Nov-2023	----	----		----	28 days	14 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-5	EPP444	18-Oct-2023	01-Nov-2023	----	----		----	28 days	14 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2342-A-6	EPP444	18-Oct-2023	01-Nov-2023	----	----		----	28 days	14 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Mercury in Soil/Solid by CVAAS	E510	1212315	1	20	5.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1212316	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	1212318	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	1212317	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	1212315	2	20	10.0	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1212316	2	20	10.0	10.0	✔
Moisture Content by Gravimetry	E144	1212318	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	1212317	1	20	5.0	5.0	✔
Method Blanks (MB)							
Mercury by CVAAS (TCLP)	E512	1223125	2	12	16.6	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	1212315	1	20	5.0	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	1223126	2	12	16.6	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1212316	1	20	5.0	5.0	✔
Moisture Content by Gravimetry	E144	1212318	1	12	8.3	5.0	✔
Matrix Spikes (MS)							
Mercury by CVAAS (TCLP)	E512	1223125	2	12	16.6	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	1223126	2	12	16.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 ALS Environmental - Vancouver	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^{\circ}\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^{\circ}\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 ALS Environmental - Vancouver	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Metals in Soil/Solid by CRC ICPMS	E440 ALS Environmental - Vancouver	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Metals by CRC ICPMS (TCLP)	E444 ALS Environmental - Vancouver	Soil/Solid	EPA 1311/6020B (mod)	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 ALS Environmental - Vancouver	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Mercury by CVAAS (TCLP)	E512 ALS Environmental - Vancouver	Soil/Solid	SW 846 -1311/245.1 CVAA ON TCLP LEACHATE	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by CVAAS.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 ALS Environmental - Vancouver	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at $<60^{\circ}\text{C}$) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Digestion for Metals and Mercury	EP440 ALS Environmental - Vancouver	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Digestion for Silver	EP440.Ag ALS Environmental - Vancouver	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)	EPP444 ALS Environmental - Vancouver	Soil/Solid	EPA 1311	Preparation of a Toxicity Characteristic Leaching Procedure (TCLP) solid sample involves particle size reduction, homogenization, then determination of appropriate extraction fluid. A measured portion of fresh subsample is placed in an extraction bottle with the appropriate extraction fluid then tumbled in a rotary extractor for 18+/- 2 hours at 23 +/- 2 C. The liquid leachate is filtered to separate from solids then bottled and prepared for analytical tests.

QUALITY CONTROL REPORT

Work Order	: VA23C5710	Page	: 1 of 13
Client	: Covanta Burnaby Renewable Energy, ULC	Laboratory	: ALS Environmental - Vancouver
Contact	: Nicole Victor	Account Manager	: Ian Chen
Address	: 5150 Riverbend Drive Burnaby BC Canada V3N 4V3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	:	Telephone	: +1 604 253 4188
Project	: Weekly Bottom Ash - Suite	Date Samples Received	: 25-Oct-2023 11:50
PO	: VANCO0000051998	Date Analysis Commenced	: 28-Oct-2023
C-O-C number	: ----	Issue Date	: 08-Nov-2023 09:23
Sampler	: ----		
Site	: ----		
Quote number	: Standing Offer (BC work)		
No. of samples received	: 12		
No. of samples analysed	: 12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Ghazaleh Khanmirzaei	Analyst	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Rebecca Sit	Supervisor - Organics Extractions	Vancouver Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Sam Silveira	Lab Assistant	Vancouver Metals, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include 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 predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1212317)											
VA23C4020-019	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	7.33	7.13	2.8%	5%	----
Physical Tests (QC Lot: 1212318)											
VA23C5710-001	BA2342-A-1	Moisture	----	E144	0.25	%	26.0	26.3	1.11%	20%	----
Metals (QC Lot: 1212315)											
VA23C4020-019	Anonymous	Mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	0	Diff <2x LOR	----
Metals (QC Lot: 1212316)											
VA23C4020-019	Anonymous	Aluminum	7429-90-5	E440	50	mg/kg	17800	16500	7.47%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	1.57	1.20	26.5%	30%	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	10.8	9.73	10.8%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	178	162	9.82%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.39	0.35	0.04	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		Boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	0.398	0.333	17.8%	30%	----
		Calcium	7440-70-2	E440	50	mg/kg	7330	6360	14.2%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	33.0	30.2	8.88%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	13.0	12.5	3.41%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	43.3	38.2	12.4%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	37800	36600	3.37%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	12.3	10.2	18.6%	40%	----
		Lithium	7439-93-2	E440	2.0	mg/kg	12.2	11.6	0.7	Diff <2x LOR	----
		Magnesium	7439-95-4	E440	20	mg/kg	9370	8980	4.28%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	1120	1100	1.64%	30%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	1.06	0.65	48.2%	40%	DUP-H
		Nickel	7440-02-0	E440	0.50	mg/kg	23.3	22.4	3.85%	30%	----
		Phosphorus	7723-14-0	E440	50	mg/kg	1090	1020	6.50%	30%	----
Potassium	7440-09-7	E440	100	mg/kg	1170	1060	9.79%	40%	----		
Selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----		
Silver	7440-22-4	E440	0.10	mg/kg	0.32	0.21	0.11	Diff <2x LOR	----		
Sodium	7440-23-5	E440	50	mg/kg	518	443	15.6%	40%	----		



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 1212316) - continued											
VA23C4020-019	Anonymous	Strontium	7440-24-6	E440	0.50	mg/kg	51.6	45.5	12.5%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		Thallium	7440-28-0	E440	0.050	mg/kg	0.065	0.060	0.005	Diff <2x LOR	----
		Tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		Titanium	7440-32-6	E440	1.0	mg/kg	1040	945	9.87%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Uranium	7440-61-1	E440	0.050	mg/kg	0.492	0.466	5.40%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	85.2	79.8	6.64%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	121	108	11.2%	30%	----
		Zirconium	7440-67-7	E440	1.0	mg/kg	5.1	4.9	0.2	Diff <2x LOR	----

Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1212318)						
Moisture	---	E144	0.25	%	<0.25	---
Metals (QCLot: 1212315)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 1212316)						
Aluminum	7429-90-5	E440	50	mg/kg	<50	---
Antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
Arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
Barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
Beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
Bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
Boron	7440-42-8	E440	5	mg/kg	<5.0	---
Cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
Calcium	7440-70-2	E440	50	mg/kg	<50	---
Chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
Cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
Copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
Iron	7439-89-6	E440	50	mg/kg	<50	---
Lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
Lithium	7439-93-2	E440	2	mg/kg	<2.0	---
Magnesium	7439-95-4	E440	20	mg/kg	<20	---
Manganese	7439-96-5	E440	1	mg/kg	<1.0	---
Molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
Nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
Phosphorus	7723-14-0	E440	50	mg/kg	<50	---
Potassium	7440-09-7	E440	100	mg/kg	<100	---
Selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
Silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
Sodium	7440-23-5	E440	50	mg/kg	<50	---
Strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
Sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
Thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
Tin	7440-31-5	E440	2	mg/kg	<2.0	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 1212316) - continued						
Titanium	7440-32-6	E440	1	mg/kg	<1.0	----
Tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
Uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
Vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
Zinc	7440-66-6	E440	2	mg/kg	<2.0	----
Zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
TCLP Metals (QCLot: 1217312)						
Antimony, TCLP	7440-36-0	E444	0.1	mg/L	<0.10	----
Arsenic, TCLP	7440-38-2	E444	1	mg/L	<1.0	----
Barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	----
Beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	----
Boron, TCLP	7440-42-8	E444	0.5	mg/L	<0.50	----
Cadmium, TCLP	7440-43-9	E444	0.05	mg/L	<0.050	----
Calcium, TCLP	7440-70-2	E444	10	mg/L	<10	----
Chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	----
Cobalt, TCLP	7440-48-4	E444	0.05	mg/L	<0.050	----
Copper, TCLP	7440-50-8	E444	0.05	mg/L	<0.050	----
Iron, TCLP	7439-89-6	E444	5	mg/L	<5.0	----
Lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----
Magnesium, TCLP	7439-95-4	E444	2.5	mg/L	<2.5	----
Nickel, TCLP	7440-02-0	E444	0.25	mg/L	<0.25	----
Selenium, TCLP	7782-49-2	E444	0.1	mg/L	<0.10	----
Silver, TCLP	7440-22-4	E444	0.05	mg/L	<0.050	----
Thallium, TCLP	7440-28-0	E444	1	mg/L	<1.0	----
Uranium, TCLP	7440-61-1	E444	0.2	mg/L	<0.20	----
Vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	----
Zinc, TCLP	7440-66-6	E444	0.5	mg/L	<0.50	----
Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	----
TCLP Metals (QCLot: 1217313)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 1223125)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 1223126)						
Antimony, TCLP	7440-36-0	E444	0.1	mg/L	<0.10	----
Arsenic, TCLP	7440-38-2	E444	1	mg/L	<1.0	----



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
TCLP Metals (QCLot: 1223126) - continued						
Barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	----
Beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	----
Boron, TCLP	7440-42-8	E444	0.5	mg/L	<0.50	----
Cadmium, TCLP	7440-43-9	E444	0.05	mg/L	<0.050	----
Calcium, TCLP	7440-70-2	E444	10	mg/L	<10	----
Chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	----
Cobalt, TCLP	7440-48-4	E444	0.05	mg/L	<0.050	----
Copper, TCLP	7440-50-8	E444	0.05	mg/L	<0.050	----
Iron, TCLP	7439-89-6	E444	5	mg/L	<5.0	----
Lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----
Magnesium, TCLP	7439-95-4	E444	2.5	mg/L	<2.5	----
Nickel, TCLP	7440-02-0	E444	0.25	mg/L	<0.25	----
Selenium, TCLP	7782-49-2	E444	0.1	mg/L	<0.10	----
Silver, TCLP	7440-22-4	E444	0.05	mg/L	<0.050	----
Thallium, TCLP	7440-28-0	E444	1	mg/L	<1.0	----
Uranium, TCLP	7440-61-1	E444	0.2	mg/L	<0.20	----
Vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	----
Zinc, TCLP	7440-66-6	E444	0.5	mg/L	<0.50	----
Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1212317)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
Physical Tests (QCLot: 1212318)									
Moisture	----	E144	0.25	%	50 %	101	90.0	110	----
Metals (QCLot: 1212315)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	102	80.0	120	----
Metals (QCLot: 1212316)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	91.2	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	103	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	100	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	92.7	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	87.8	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	90.0	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	92.3	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	90.7	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	89.1	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	90.9	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	88.8	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	87.1	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	90.0	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	89.2	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	85.8	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	97.7	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	92.6	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	96.0	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	89.0	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	110	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	90.8	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.4	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	# 79.1	80.0	120	MES
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	92.9	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	93.1	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	98.7	80.0	120	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 1212316) - continued									
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	90.5	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	95.3	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	92.2	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	93.8	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	88.2	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	91.0	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	89.8	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	91.4	80.0	120	----

Qualifiers

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
TCLP Metals (QCLot: 1217312)										
VA23C5710-001	BA2342-A-1	Antimony, TCLP	7440-36-0	E444	5.37 mg/L	5 mg/L	107	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	5.1 mg/L	5 mg/L	101	50.0	140	----
		Barium, TCLP	7440-39-3	E444	12.5 mg/L	12.5 mg/L	99.8	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.248 mg/L	0.25 mg/L	99.4	50.0	140	----
		Boron, TCLP	7440-42-8	E444	10.5 mg/L	10 mg/L	105	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.242 mg/L	0.25 mg/L	96.7	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	250 mg/L	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.24 mg/L	1.25 mg/L	99.5	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	ND mg/L	0.25 mg/L	ND	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.30 mg/L	2.5 mg/L	92.2	50.0	140	----
		Iron, TCLP	7439-89-6	E444	245 mg/L	250 mg/L	98.1	50.0	140	----
		Lead, TCLP	7439-92-1	E444	9.91 mg/L	10 mg/L	99.1	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	280 mg/L	250 mg/L	112	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.42 mg/L	2.5 mg/L	96.9	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	5.07 mg/L	5 mg/L	101	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.079 mg/L	0.1 mg/L	78.6	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	5.0 mg/L	5 mg/L	100	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	5.11 mg/L	5 mg/L	102	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.75 mg/L	0.75 mg/L	99.8	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	ND mg/L	10 mg/L	ND	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.7 mg/L	1 mg/L	73.4	50.0	150	----
TCLP Metals (QCLot: 1217313)										
VA23C5710-001	BA2342-A-1	Mercury, TCLP	7439-97-6	E512	0.0008 mg/L	0.001 mg/L	79.2	50.0	140	----
TCLP Metals (QCLot: 1223125)										
VA23C5710-003	BA2342-A-3	Mercury, TCLP	7439-97-6	E512	0.0010 mg/L	0.001 mg/L	102	50.0	140	----
TCLP Metals (QCLot: 1223126)										
VA23C5710-003	BA2342-A-3	Antimony, TCLP	7440-36-0	E444	5.00 mg/L	5 mg/L	100.0	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	5.4 mg/L	5 mg/L	107	50.0	140	----
		Barium, TCLP	7440-39-3	E444	14.5 mg/L	12.5 mg/L	116	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.249 mg/L	0.25 mg/L	99.5	50.0	140	----



Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
TCLP Metals (QCLot: 1223126) - continued										
VA23C5710-003	BA2342-A-3	Boron, TCLP	7440-42-8	E444	10.5 mg/L	10 mg/L	105	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.247 mg/L	0.25 mg/L	99.0	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	250 mg/L	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.27 mg/L	1.25 mg/L	102	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	0.252 mg/L	0.25 mg/L	101	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.43 mg/L	2.5 mg/L	97.1	50.0	140	----
		Iron, TCLP	7439-89-6	E444	243 mg/L	250 mg/L	97.1	50.0	140	----
		Lead, TCLP	7439-92-1	E444	9.42 mg/L	10 mg/L	94.2	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	262 mg/L	250 mg/L	105	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.54 mg/L	2.5 mg/L	102	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	4.87 mg/L	5 mg/L	97.4	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.081 mg/L	0.1 mg/L	81.2	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	4.7 mg/L	5 mg/L	93.9	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	4.98 mg/L	5 mg/L	99.6	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.80 mg/L	0.75 mg/L	106	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	10.2 mg/L	10 mg/L	102	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.8 mg/L	1 mg/L	80.2	50.0	150	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 1212315)									
	SCP SS-2	Mercury	7439-97-6	E510	0.059 mg/kg	97.7	70.0	130	----
Metals (QCLot: 1212316)									
	SCP SS-2	Aluminum	7429-90-5	E440	9817 mg/kg	115	70.0	130	----
	SCP SS-2	Antimony	7440-36-0	E440	3.99 mg/kg	101	70.0	130	----
	SCP SS-2	Arsenic	7440-38-2	E440	3.73 mg/kg	104	70.0	130	----
	SCP SS-2	Barium	7440-39-3	E440	105 mg/kg	101	70.0	130	----
	SCP SS-2	Beryllium	7440-41-7	E440	0.349 mg/kg	103	70.0	130	----
	SCP SS-2	Boron	7440-42-8	E440	8.5 mg/kg	119	40.0	160	----
	SCP SS-2	Cadmium	7440-43-9	E440	0.91 mg/kg	97.1	70.0	130	----
	SCP SS-2	Calcium	7440-70-2	E440	31082 mg/kg	107	70.0	130	----
	SCP SS-2	Chromium	7440-47-3	E440	101 mg/kg	112	70.0	130	----
	SCP SS-2	Cobalt	7440-48-4	E440	6.9 mg/kg	99.6	70.0	130	----
	SCP SS-2	Copper	7440-50-8	E440	123 mg/kg	96.6	70.0	130	----
	SCP SS-2	Iron	7439-89-6	E440	23558 mg/kg	100	70.0	130	----
	SCP SS-2	Lead	7439-92-1	E440	267 mg/kg	99.5	70.0	130	----
	SCP SS-2	Lithium	7439-93-2	E440	9.5 mg/kg	100	70.0	130	----
	SCP SS-2	Magnesium	7439-95-4	E440	5509 mg/kg	111	70.0	130	----
	SCP SS-2	Manganese	7439-96-5	E440	269 mg/kg	109	70.0	130	----
	SCP SS-2	Molybdenum	7439-98-7	E440	1.03 mg/kg	101	70.0	130	----
	SCP SS-2	Nickel	7440-02-0	E440	26.7 mg/kg	98.8	70.0	130	----
	SCP SS-2	Phosphorus	7723-14-0	E440	752 mg/kg	111	70.0	130	----
	SCP SS-2	Potassium	7440-09-7	E440	1587 mg/kg	114	70.0	130	----
	SCP SS-2	Sodium	7440-23-5	E440	797 mg/kg	96.9	70.0	130	----
	SCP SS-2	Strontium	7440-24-6	E440	86.1 mg/kg	101	70.0	130	----
	SCP SS-2	Thallium	7440-28-0	E440	0.0786 mg/kg	97.7	40.0	160	----
	SCP SS-2	Tin	7440-31-5	E440	10.6 mg/kg	93.0	70.0	130	----
	SCP SS-2	Titanium	7440-32-6	E440	839 mg/kg	113	70.0	130	----




Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 1212316) - continued									
	SCP SS-2	Uranium	7440-61-1	E440	0.52 mg/kg	100	70.0	130	----
	SCP SS-2	Vanadium	7440-62-2	E440	32.7 mg/kg	104	70.0	130	----
	SCP SS-2	Zinc	7440-66-6	E440	297 mg/kg	96.6	70.0	130	----
	SCP SS-2	Zirconium	7440-67-7	E440	5.73 mg/kg	92.2	70.0	130	----



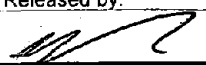
Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)	
Company: Covanta Energy		<input type="checkbox"/> Standard <input type="checkbox"/> Other <input checked="" type="checkbox"/> PDF <input type="checkbox"/> Excel <input type="checkbox"/> Digital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

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

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
BA2342-A-1	Environmental Division Vancouver Work Order Reference VA23C5710  Telephone: +1 604 253 4188	18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-2		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-3		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-4		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-5		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-6		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-7		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-8		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-9		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-10		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-11		18-Oct-23	9:00	Soil	X	X	X	1	
BA2342-A-12		18-Oct-23	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
	25-Oct-23	0900	CW	Oct 25	1150	18, 18 °C				