

Bottom Ash Data

2024 Week 32

The following analytical report represents bottom ash composite results for week 32 of 2024 (August 4, 2024 to August 10, 2024).

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



CERTIFICATE OF ANALYSIS

<p>Work Order : VA24C0336</p> <p>Client : Reworld Renewable Burnaby, 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 : Weekly Bottom Ash - Suite</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : (includes 2.1 pH)</p> <p>Quote number : Covanta Burnaby Standing Offer 2024</p> <p>No. of samples received : 12</p> <p>No. of samples analysed : 12</p>	<p>Page : 1 of 11</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Ian Chen</p> <p>Address : 8081 Lougheed Highway Burnaby BC Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 13-Aug-2024 13:00</p> <p>Date Analysis Commenced : 14-Aug-2024</p> <p>Issue Date : 22-Aug-2024 14:37</p>
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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>
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Owen Cheng		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)					BA2432 - A-1	BA2432 - A-2	BA2432 - A-3	BA2432 - A-4	BA2432 - A-5
Client sampling date / time					07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-001	VA24C0336-002	VA24C0336-003	VA24C0336-004	VA24C0336-005
					Result	Result	Result	Result	Result
Physical Tests									
Moisture	----	E144/VA	0.25	%	19.3	21.5	19.2	22.3	20.0
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	12.2	11.9	12.3	11.8	12.2
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	43400	36000	32900	32600	48500
Antimony	7440-36-0	E440/VA	0.10	mg/kg	82.7	89.8	75.6	83.9	77.8
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	20.7	25.0	19.0	21.4	23.9
Barium	7440-39-3	E440/VA	0.50	mg/kg	612	505	674	489	668
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.39	0.31	0.37	0.34	0.46
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	18.5	5.98	5.03	6.07	6.59
Boron	7440-42-8	E440/VA	5.0	mg/kg	273	168	200	197	202
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	8.24	6.25	5.76	7.01	5.91
Calcium	7440-70-2	E440/VA	50	mg/kg	126000	123000	113000	123000	130000
Chromium	7440-47-3	E440/VA	0.50	mg/kg	209	209	147	126	176
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	36.4	76.0	53.5	57.2	70.9
Copper	7440-50-8	E440/VA	0.50	mg/kg	1430	1280	952	2160	1530
Iron	7439-89-6	E440/VA	50	mg/kg	53500	54700	81100	44800	38800
Lead	7439-92-1	E440/VA	0.50	mg/kg	252	2510	224	319	304
Lithium	7439-93-2	E440/VA	2.0	mg/kg	27.1	44.1	26.7	24.4	25.8
Magnesium	7439-95-4	E440/VA	20	mg/kg	12200	11800	11600	12100	12300
Manganese	7439-96-5	E440/VA	1.0	mg/kg	990	863	1220	997	799
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.0598	<0.0500	0.102	<0.0500	0.0585
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	18.3	14.8	26.8	22.3	13.3
Nickel	7440-02-0	E440/VA	0.50	mg/kg	184	150	106	157	147
Phosphorus	7723-14-0	E440/VA	50	mg/kg	8740	10500	7850	8420	9390
Potassium	7440-09-7	E440/VA	100	mg/kg	5950	5440	5250	6240	5520
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.28	0.26	0.28	0.27	0.27
Silver	7440-22-4	E440/VA	0.10	mg/kg	6.11	3.02	2.85	2.82	4.90
Sodium	7440-23-5	E440/VA	50	mg/kg	16300	15000	14800	16600	15200
Strontium	7440-24-6	E440/VA	0.50	mg/kg	276	353	283	297	288



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2432 - A-1	BA2432 - A-2	BA2432 - A-3	BA2432 - A-4	BA2432 - A-5
Client sampling date / time					07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-001	VA24C0336-002	VA24C0336-003	VA24C0336-004	VA24C0336-005
					Result	Result	Result	Result	Result
Metals									
Sulfur	7704-34-9	E440/VA	1000	mg/kg	10900	10900	9000	11400	9900
Thallium	7440-28-0	E440/VA	0.050	mg/kg	0.083	<0.050	<0.050	<0.050	<0.050
Tin	7440-31-5	E440/VA	2.0	mg/kg	76.3	92.1	71.7	95.4	66.6
Titanium	7440-32-6	E440/VA	1.0	mg/kg	568	357	388	216	414
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	4.83	6.51	14.2	4.38	5.05
Uranium	7440-61-1	E440/VA	0.050	mg/kg	1.38	1.30	1.28	1.50	1.45
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	49.2	41.2	53.4	42.5	44.0
Zinc	7440-66-6	E440/VA	2.0	mg/kg	17800	2740	2520	4140	2580
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	1.7	2.6	1.6	3.0	2.6
TCLP Metals									
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	12.0	11.9	12.0	11.9	12.0
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	5.58	5.96	7.09	6.67	6.21
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.90	2.90	2.90	2.90	2.90
pH, TCLP final	----	EPP444/VA	0.010	pH units	6.84	6.54	7.04	7.16	7.54
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	2.19	2.28	2.28	2.30	2.17
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	0.202	0.077	<0.050	<0.050	<0.050
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	1820	1830	1780	1750	1770
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	0.732	0.953	0.532	0.457	0.215
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	0.875	1.01	0.869	0.923	0.858
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	105	117	107	96.3	97.5
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	0.39	0.38	<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	BA2432 - A-1	BA2432 - A-2	BA2432 - A-3	BA2432 - A-4	BA2432 - A-5
Client sampling date / time					07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-001	VA24C0336-002	VA24C0336-003	VA24C0336-004	VA24C0336-005	
					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	6.16	14.7	3.45	1.73	<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)					BA2432 - A-6	BA2432 - A-7	BA2432 - A-8	BA2432 - A-9	BA2432 - A-10
Client sampling date / time					07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-006	VA24C0336-007	VA24C0336-008	VA24C0336-009	VA24C0336-010
					Result	Result	Result	Result	Result
Physical Tests									
Moisture	---	E144/VA	0.25	%	18.6	22.2	20.1	18.1	20.8
pH (1:2 soil:water)	---	E108/VA	0.10	pH units	12.2	11.8	11.9	11.6	11.8
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	48900	43600	31100	34800	43800
Antimony	7440-36-0	E440/VA	0.10	mg/kg	80.2	96.8	102	90.3	89.8
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	22.1	22.7	22.8	21.8	20.1
Barium	7440-39-3	E440/VA	0.50	mg/kg	581	615	548	637	576
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	1.91	0.35	0.35	0.34	0.31
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	5.29	7.07	7.94	17.7	5.21
Boron	7440-42-8	E440/VA	5.0	mg/kg	194	175	200	324	182
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	15.8	8.40	8.41	8.01	6.09
Calcium	7440-70-2	E440/VA	50	mg/kg	133000	131000	131000	132000	118000
Chromium	7440-47-3	E440/VA	0.50	mg/kg	188	261	134	236	143
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	55.1	77.2	48.1	57.3	93.8
Copper	7440-50-8	E440/VA	0.50	mg/kg	2460	21900	2350	1370	5360
Iron	7439-89-6	E440/VA	50	mg/kg	44300	47400	53400	52700	66500
Lead	7439-92-1	E440/VA	0.50	mg/kg	346	366	499	292	559
Lithium	7439-93-2	E440/VA	2.0	mg/kg	23.0	25.4	25.8	38.7	23.5
Magnesium	7439-95-4	E440/VA	20	mg/kg	12500	11200	12000	13200	11500
Manganese	7439-96-5	E440/VA	1.0	mg/kg	846	1160	1100	1090	911
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.0865	0.192	<0.0500	<0.0500	<0.0500
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	14.4	15.0	14.7	17.4	12.6
Nickel	7440-02-0	E440/VA	0.50	mg/kg	181	156	123	239	123
Phosphorus	7723-14-0	E440/VA	50	mg/kg	8290	8980	9410	9360	8210
Potassium	7440-09-7	E440/VA	100	mg/kg	5490	6040	5740	6830	5200
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.30	0.32	0.27	0.24	0.38
Silver	7440-22-4	E440/VA	0.10	mg/kg	3.17	4.19	3.45	3.96	>53.9
Sodium	7440-23-5	E440/VA	50	mg/kg	14900	16300	16400	19200	14300
Strontium	7440-24-6	E440/VA	0.50	mg/kg	304	330	309	317	388
Sulfur	7704-34-9	E440/VA	1000	mg/kg	11700	11900	10800	10300	10400



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BA2432 - A-6	BA2432 - A-7	BA2432 - A-8	BA2432 - A-9	BA2432 - A-10
Client sampling date / time					07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-006	VA24C0336-007	VA24C0336-008	VA24C0336-009	VA24C0336-010
					Result	Result	Result	Result	Result
Metals									
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	110	86.5	93.0	75.6	493
Titanium	7440-32-6	E440/VA	1.0	mg/kg	383	382	349	433	502
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	7.24	5.18	4.83	5.41	4.58
Uranium	7440-61-1	E440/VA	0.050	mg/kg	1.42	1.44	1.44	1.47	1.31
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	46.4	50.8	43.0	59.2	40.9
Zinc	7440-66-6	E440/VA	2.0	mg/kg	11100	3500	2920	4870	2800
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	3.5	3.6	2.1	2.8	2.4
TCLP Metals									
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	12.0	11.9	11.9	11.9	11.9
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	7.29	7.24	7.40	6.55	6.55
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.90	2.90	2.90	2.90	2.90
pH, TCLP final	----	EPP444/VA	0.010	pH units	7.57	7.16	6.80	7.27	7.20
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	2.25	2.15	2.53	2.19	2.27
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	<0.050	<0.050	0.068	<0.050	<0.050
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	1820	1680	1720	1720	1690
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	0.488	0.593	0.790	0.288	0.303
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	0.802	1.02	0.821	1.03	0.870
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	96.3	95.2	96.1	93.4	96.6
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	<0.25	<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
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 (Matrix: Soil/Solid)					Client sample ID	BA2432 - A-6	BA2432 - A-7	BA2432 - A-8	BA2432 - A-9	BA2432 - A-10
Client sampling date / time					07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00	07-Aug-2024 09:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-006	VA24C0336-007	VA24C0336-008	VA24C0336-009	VA24C0336-010	
					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	<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	<0.50	2.49	8.04	1.29	1.23	1.23
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)					BA2432 - A-11	BA2432 - A-12	----	----	----
Client sampling date / time					07-Aug-2024 09:00	07-Aug-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-011	VA24C0336-012	-----	-----	-----
					Result	Result	---	---	---
Physical Tests									
Moisture	---	E144/VA	0.25	%	20.5	19.6	---	---	---
pH (1:2 soil:water)	---	E108/VA	0.10	pH units	11.6	11.6	---	---	---
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	41000	40200	---	---	---
Antimony	7440-36-0	E440/VA	0.10	mg/kg	95.6	90.9	---	---	---
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	33.5	21.2	---	---	---
Barium	7440-39-3	E440/VA	0.50	mg/kg	651	628	---	---	---
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.37	0.43	---	---	---
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	6.44	5.56	---	---	---
Boron	7440-42-8	E440/VA	5.0	mg/kg	205	214	---	---	---
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	7.51	7.17	---	---	---
Calcium	7440-70-2	E440/VA	50	mg/kg	131000	125000	---	---	---
Chromium	7440-47-3	E440/VA	0.50	mg/kg	158	139	---	---	---
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	750	148	---	---	---
Copper	7440-50-8	E440/VA	0.50	mg/kg	1970	2280	---	---	---
Iron	7439-89-6	E440/VA	50	mg/kg	62200	51400	---	---	---
Lead	7439-92-1	E440/VA	0.50	mg/kg	802	6980	---	---	---
Lithium	7439-93-2	E440/VA	2.0	mg/kg	50.1	30.7	---	---	---
Magnesium	7439-95-4	E440/VA	20	mg/kg	11800	11600	---	---	---
Manganese	7439-96-5	E440/VA	1.0	mg/kg	1340	862	---	---	---
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.0679	<0.0500	---	---	---
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	15.9	19.3	---	---	---
Nickel	7440-02-0	E440/VA	0.50	mg/kg	418	155	---	---	---
Phosphorus	7723-14-0	E440/VA	50	mg/kg	9170	9410	---	---	---
Potassium	7440-09-7	E440/VA	100	mg/kg	5930	6090	---	---	---
Selenium	7782-49-2	E440/VA	0.20	mg/kg	0.32	0.35	---	---	---
Silver	7440-22-4	E440/VA	0.10	mg/kg	4.19	2.69	---	---	---
Sodium	7440-23-5	E440/VA	50	mg/kg	16200	16700	---	---	---
Strontium	7440-24-6	E440/VA	0.50	mg/kg	293	287	---	---	---
Sulfur	7704-34-9	E440/VA	1000	mg/kg	11200	10900	---	---	---



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2432 - A-11	BA2432 - A-12	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time	07-Aug-2024 09:00	07-Aug-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-011	VA24C0336-012	-----	-----	-----	
					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	88.8	219	---	---	---	
Titanium	7440-32-6	E440/VA	1.0	mg/kg	392	399	---	---	---	
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	6.63	5.16	---	---	---	
Uranium	7440-61-1	E440/VA	0.050	mg/kg	1.59	1.40	---	---	---	
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	44.3	43.8	---	---	---	
Zinc	7440-66-6	E440/VA	2.0	mg/kg	3960	3020	---	---	---	
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	2.6	2.7	---	---	---	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444/VA	0.010	pH units	11.9	12.0	---	---	---	
pH, TCLP 2nd preliminary	----	EPP444/VA	0.010	pH units	7.15	6.87	---	---	---	
pH, TCLP extraction fluid initial	----	EPP444/VA	0.010	pH units	2.90	2.90	---	---	---	
pH, TCLP final	----	EPP444/VA	0.010	pH units	7.10	7.17	---	---	---	
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	2.26	2.26	---	---	---	
Cadmium, TCLP	7440-43-9	E444/VA	0.050	mg/L	<0.050	<0.050	---	---	---	
Calcium, TCLP	7440-70-2	E444/VA	10	mg/L	1730	1780	---	---	---	
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	0.449	0.672	---	---	---	
Copper, TCLP	7440-50-8	E444/VA	0.050	mg/L	0.829	0.870	---	---	---	
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	95.6	94.5	---	---	---	
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		BA2432 - A-11	BA2432 - A-12	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time		07-Aug-2024 09:00	07-Aug-2024 09:00	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C0336-011	VA24C0336-012	-----	-----	-----	-----	-----
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	2.47	2.56	---	---	---	---	---
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 : VA24C0336</p> <p>Client : Reworld Renewable Burnaby, 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 : Weekly Bottom Ash - Suite</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : (includes 2.1 pH)</p> <p>Quote number : Covanta Burnaby Standing Offer 2024</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 : 13-Aug-2024 13:00</p> <p>Issue Date : 22-Aug-2024 14:40</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 Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate 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	VA24C0336-001	BA2432 - A-1	Bismuth	7440-69-9	E440	99.4 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C0336-001	BA2432 - A-1	Chromium	7440-47-3	E440	32.6 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C0336-001	BA2432 - A-1	Manganese	7439-96-5	E440	82.2 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C0336-001	BA2432 - A-1	Silver	7440-22-4	E440	67.5 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C0336-001	BA2432 - A-1	Titanium	7440-32-6	E440	72.2 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C0336-001	BA2432 - A-1	Tungsten	7440-33-7	E440	33.8 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA24C0336-001	BA2432 - A-1	Zinc	7440-66-6	E440	148 % DUP-H	30%	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.



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 BA2432 - A-1	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✔	22-Aug-2024	28 days	15 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-10	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✔	22-Aug-2024	28 days	15 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-11	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✔	22-Aug-2024	28 days	15 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-12	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✔	22-Aug-2024	28 days	15 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-2	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✔	22-Aug-2024	28 days	15 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-3	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✔	22-Aug-2024	28 days	15 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-4	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✔	22-Aug-2024	28 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	
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-5	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✓	22-Aug-2024	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-6	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✓	22-Aug-2024	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-7	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✓	22-Aug-2024	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-8	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✓	22-Aug-2024	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
LDPE bag BA2432 - A-9	E510	07-Aug-2024	21-Aug-2024	28 days	14 days	✓	22-Aug-2024	28 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2432 - A-1	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2432 - A-10	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2432 - A-11	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
LDPE bag BA2432 - A-12	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 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		
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-2	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-3	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-4	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-5	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-6	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-7	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-8	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
LDPE bag BA2432 - A-9	E440	07-Aug-2024	21-Aug-2024	180 days	14 days	✓	22-Aug-2024	180 days	15 days	✓	
Physical Tests : Moisture Content by Gravimetry											
LDPE bag BA2432 - A-1	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 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 BA2432 - A-10	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-11	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-12	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-2	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-3	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-4	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-5	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-6	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-7	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 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 BA2432 - A-8	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : Moisture Content by Gravimetry										
LDPE bag BA2432 - A-9	E144	07-Aug-2024	----	----	----		20-Aug-2024	----	13 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-1	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✔	21-Aug-2024	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-10	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✔	21-Aug-2024	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-11	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✔	21-Aug-2024	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-12	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✔	21-Aug-2024	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-2	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✔	21-Aug-2024	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-3	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✔	21-Aug-2024	30 days	14 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-4	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✔	21-Aug-2024	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 BA2432 - A-5	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✓	21-Aug-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-6	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✓	21-Aug-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-7	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✓	21-Aug-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-8	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✓	21-Aug-2024	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
LDPE bag BA2432 - A-9	E108	07-Aug-2024	21-Aug-2024	30 days	14 days	✓	21-Aug-2024	30 days	14 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-1	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-10	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-11	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-12	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 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) BA2432 - A-2	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-3	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-4	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-5	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-6	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-7	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-8	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) BA2432 - A-9	E512	14-Aug-2024	19-Aug-2024	35 days	12 days	✓	19-Aug-2024	35 days	12 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BA2432 - A-1	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✓	20-Aug-2024	187 days	13 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) BA2432 - A-10	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-11	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-12	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-2	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-3	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-4	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-5	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-6	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-7	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 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) BA2432 - A-8	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BA2432 - A-9	E444	14-Aug-2024	19-Aug-2024	187 days	12 days	✔	20-Aug-2024	187 days	13 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-1	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-10	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-11	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-12	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-2	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-3	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-4	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 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) BA2432 - A-5	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-6	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-7	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-8	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 days	✔
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 28 day HT (e.g. Hg, CrVI, PFAS) BA2432 - A-9	EPP444	07-Aug-2024	14-Aug-2024	----	----		----	28 days	7 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 by CVAAS (TCLP)	E512	1602674	1	12	8.3	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	1605871	1	12	8.3	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	1602675	1	12	8.3	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1605872	1	12	8.3	5.0	✔
Moisture Content by Gravimetry	E144	1605874	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	1605873	1	12	8.3	5.0	✔
Laboratory Control Samples (LCS)							
Mercury in Soil/Solid by CVAAS	E510	1605871	2	12	16.6	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1605872	2	12	16.6	10.0	✔
Moisture Content by Gravimetry	E144	1605874	1	12	8.3	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	1605873	1	12	8.3	5.0	✔
Method Blanks (MB)							
Mercury by CVAAS (TCLP)	E512	1602674	1	12	8.3	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	1605871	1	12	8.3	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	1602675	1	12	8.3	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	1605872	1	12	8.3	5.0	✔
Moisture Content by Gravimetry	E144	1605874	1	12	8.3	5.0	✔
Matrix Spikes (MS)							
Mercury by CVAAS (TCLP)	E512	1602674	1	12	8.3	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	1602675	1	12	8.3	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.

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 Work Order : VA24C0336
 Client : Reworld Renewable Burnaby, ULC
 Project : Weekly Bottom Ash - Suite



<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.
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	: VA24C0336	Page	: 1 of 12
Client	: Reworld Renewable Burnaby, 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	: 13-Aug-2024 13:00
PO	: Weekly Bottom Ash - Suite	Date Analysis Commenced	: 14-Aug-2024
C-O-C number	: ----	Issue Date	: 22-Aug-2024 14:37
Sampler	: ----		
Site	: (includes 2.1 pH)		
Quote number	: Covanta Burnaby Standing Offer 2024		
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>
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia

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Work Order : VA24C0336
Client : Reworld Renewable Burnaby, ULC
Project : Weekly Bottom Ash - Suite



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: 1605873)											
VA24C0336-001	BA2432 - A-1	pH (1:2 soil:water)	----	E108	0.10	pH units	12.2	12.2	0.0%	5%	----
Physical Tests (QC Lot: 1605874)											
VA24C0336-001	BA2432 - A-1	Moisture	----	E144	0.25	%	19.3	20.1	4.00%	20%	----
Metals (QC Lot: 1605871)											
VA24C0336-001	BA2432 - A-1	Mercury	7439-97-6	E510	0.0500	mg/kg	0.0598	0.0697	0.0099	Diff <2x LOR	----
Metals (QC Lot: 1605872)											
VA24C0336-001	BA2432 - A-1	Aluminum	7429-90-5	E440	50	mg/kg	43400	32300	29.4%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	82.7	79.9	3.39%	30%	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	20.7	23.8	14.0%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	612	593	3.09%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.39	0.37	0.02	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	18.5	6.22	99.4%	30%	DUP-H
		Boron	7440-42-8	E440	5.0	mg/kg	273	240	12.7%	30%	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	8.24	7.18	13.7%	30%	----
		Calcium	7440-70-2	E440	50	mg/kg	126000	133000	5.87%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	209	291	32.6%	30%	DUP-H
		Cobalt	7440-48-4	E440	0.10	mg/kg	36.4	45.9	23.1%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	1430	1080	28.0%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	53500	59300	10.3%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	252	257	2.03%	40%	----
		Lithium	7439-93-2	E440	2.0	mg/kg	27.1	22.9	16.8%	30%	----
		Magnesium	7439-95-4	E440	20	mg/kg	12200	12200	0.470%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	990	2370	82.2%	30%	DUP-H
		Molybdenum	7439-98-7	E440	0.10	mg/kg	18.3	14.6	22.7%	40%	----
		Nickel	7440-02-0	E440	0.50	mg/kg	184	162	13.1%	30%	----
		Phosphorus	7723-14-0	E440	50	mg/kg	8740	9680	10.2%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	5950	5590	6.21%	40%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	0.28	0.33	0.05	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	6.11	3.02	67.5%	40%	DUP-H
		Sodium	7440-23-5	E440	50	mg/kg	16300	15400	5.96%	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: 1605872) - continued											
VA24C0336-001	BA2432 - A-1	Strontium	7440-24-6	E440	0.50	mg/kg	276	311	11.9%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	10900	10000	8.39%	30%	----
		Thallium	7440-28-0	E440	0.050	mg/kg	0.083	<0.050	0.033	Diff <2x LOR	----
		Tin	7440-31-5	E440	2.0	mg/kg	76.3	80.3	5.03%	40%	----
		Titanium	7440-32-6	E440	1.0	mg/kg	568	267	72.2%	40%	DUP-H
		Tungsten	7440-33-7	E440	0.50	mg/kg	4.83	6.80	33.8%	30%	DUP-H
		Uranium	7440-61-1	E440	0.050	mg/kg	1.38	1.41	1.73%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	49.2	47.9	2.61%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	17800	2680	148%	30%	DUP-H
Zirconium	7440-67-7	E440	1.0	mg/kg	1.7	1.7	0.08	Diff <2x LOR	----		
TCLP Metals (QC Lot: 1602674)											
VA24C0336-001	BA2432 - A-1	Mercury, TCLP	7439-97-6	E512	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 1602675)											
VA24C0336-001	BA2432 - A-1	Antimony, TCLP	7440-36-0	E444	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
		Arsenic, TCLP	7440-38-2	E444	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	<2.5	0	Diff <2x LOR	----
		Beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	<0.025	0	Diff <2x LOR	----
		Boron, TCLP	7440-42-8	E444	0.50	mg/L	2.19	2.34	0.15	Diff <2x LOR	----
		Cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.202	0.213	0.011	Diff <2x LOR	----
		Calcium, TCLP	7440-70-2	E444	10	mg/L	1820	1890	4.21%	30%	----
		Chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	0	Diff <2x LOR	----
		Cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.732	0.766	4.51%	30%	----
		Copper, TCLP	7440-50-8	E444	0.050	mg/L	0.875	0.914	4.44%	30%	----
		Iron, TCLP	7439-89-6	E444	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	<0.25	0	Diff <2x LOR	----
		Magnesium, TCLP	7439-95-4	E444	2.5	mg/L	105	111	5.48%	30%	----
		Nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.39	0.40	0.01	Diff <2x LOR	----
		Selenium, TCLP	7782-49-2	E444	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
		Silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Thallium, TCLP	7440-28-0	E444	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Uranium, TCLP	7440-61-1	E444	0.20	mg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	<0.15	0	Diff <2x LOR	----
		Zinc, TCLP	7440-66-6	E444	0.50	mg/L	6.16	6.42	4.21%	30%	----
Zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	<10	0	Diff <2x LOR	----		



Qualifiers

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



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: 1605874)						
Moisture	---	E144	0.25	%	<0.25	---
Metals (QCLot: 1605871)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 1605872)						
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: 1605872) - 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: 1602674)						
Mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 1602675)						
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	----



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	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1605873)									
pH (1:2 soil:water)	---	E108	---	pH units	6 pH units	100	95.0	105	---
Physical Tests (QCLot: 1605874)									
Moisture	---	E144	0.25	%	50 %	102	90.0	110	---
Metals (QCLot: 1605871)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	102	80.0	120	---
Metals (QCLot: 1605872)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	106	80.0	120	---
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	95.0	80.0	120	---
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	105	80.0	120	---
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	---
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	94.6	80.0	120	---
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	97.2	80.0	120	---
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	89.2	80.0	120	---
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	103	80.0	120	---
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	97.2	80.0	120	---
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	---
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	---
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	---
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	102	80.0	120	---
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	98.2	80.0	120	---
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	98.2	80.0	120	---
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	108	80.0	120	---
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	104	80.0	120	---
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	98.5	80.0	120	---
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	101	80.0	120	---
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	109	80.0	120	---
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	105	80.0	120	---
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	96.8	80.0	120	---
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	89.5	80.0	120	---
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	100	80.0	120	---
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	---
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	94.9	80.0	120	---



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 1605872) - continued									
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	93.4	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	95.2	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	98.3	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	98.1	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	103	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	104	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	103	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	99.1	80.0	120	----



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: 1602674)										
VA24C0336-001	BA2432 - A-1	Mercury, TCLP	7439-97-6	E512	0.0010 mg/L	0.001 mg/L	101	50.0	140	----
TCLP Metals (QCLot: 1602675)										
VA24C0336-001	BA2432 - A-1	Antimony, TCLP	7440-36-0	E444	4.79 mg/L	5 mg/L	95.7	50.0	140	----
		Arsenic, TCLP	7440-38-2	E444	5.1 mg/L	5 mg/L	102	50.0	140	----
		Barium, TCLP	7440-39-3	E444	11.6 mg/L	12.5 mg/L	92.7	50.0	140	----
		Beryllium, TCLP	7440-41-7	E444	0.248 mg/L	0.25 mg/L	99.3	50.0	140	----
		Boron, TCLP	7440-42-8	E444	9.12 mg/L	10 mg/L	91.2	50.0	140	----
		Cadmium, TCLP	7440-43-9	E444	0.255 mg/L	0.25 mg/L	102	50.0	140	----
		Calcium, TCLP	7440-70-2	E444	ND mg/L	----	ND	50.0	140	----
		Chromium, TCLP	7440-47-3	E444	1.23 mg/L	1.25 mg/L	98.1	50.0	140	----
		Cobalt, TCLP	7440-48-4	E444	ND mg/L	----	ND	50.0	140	----
		Copper, TCLP	7440-50-8	E444	2.35 mg/L	2.5 mg/L	94.0	50.0	140	----
		Iron, TCLP	7439-89-6	E444	240 mg/L	250 mg/L	95.9	50.0	140	----
		Lead, TCLP	7439-92-1	E444	9.60 mg/L	10 mg/L	96.0	50.0	140	----
		Magnesium, TCLP	7439-95-4	E444	264 mg/L	250 mg/L	106	50.0	140	----
		Nickel, TCLP	7440-02-0	E444	2.39 mg/L	2.5 mg/L	95.7	50.0	140	----
		Selenium, TCLP	7782-49-2	E444	5.06 mg/L	5 mg/L	101	50.0	140	----
		Silver, TCLP	7440-22-4	E444	0.072 mg/L	0.1 mg/L	72.3	50.0	140	----
		Thallium, TCLP	7440-28-0	E444	4.8 mg/L	5 mg/L	95.8	50.0	140	----
		Uranium, TCLP	7440-61-1	E444	4.85 mg/L	5 mg/L	97.1	50.0	150	----
		Vanadium, TCLP	7440-62-2	E444	0.74 mg/L	0.75 mg/L	99.2	50.0	140	----
		Zinc, TCLP	7440-66-6	E444	9.64 mg/L	10 mg/L	96.4	50.0	140	----
		Zirconium, TCLP	7440-67-7	E444	0.9 mg/L	1 mg/L	87.0	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: 1605871)									
QC-1605871-003	MRCA-21	Mercury	7439-97-6	E510	0.068 mg/kg	102	70.0	130	----
Metals (QCLot: 1605872)									
QC-1605872-003	MRCA-21	Aluminum	7429-90-5	E440	22500 mg/kg	118	70.0	130	----
QC-1605872-003	MRCA-21	Antimony	7440-36-0	E440	24.8 mg/kg	105	70.0	130	----
QC-1605872-003	MRCA-21	Arsenic	7440-38-2	E440	21.2 mg/kg	103	70.0	130	----
QC-1605872-003	MRCA-21	Barium	7440-39-3	E440	788 mg/kg	101	70.0	130	----
QC-1605872-003	MRCA-21	Beryllium	7440-41-7	E440	1.82 mg/kg	104	70.0	130	----
QC-1605872-003	MRCA-21	Bismuth	7440-69-9	E440	1.78 mg/kg	114	70.0	130	----
QC-1605872-003	MRCA-21	Cadmium	7440-43-9	E440	2.15 mg/kg	106	70.0	130	----
QC-1605872-003	MRCA-21	Calcium	7440-70-2	E440	4900 mg/kg	103	70.0	130	----
QC-1605872-003	MRCA-21	Chromium	7440-47-3	E440	56.9 mg/kg	110	70.0	130	----
QC-1605872-003	MRCA-21	Cobalt	7440-48-4	E440	32 mg/kg	103	70.0	130	----
QC-1605872-003	MRCA-21	Copper	7440-50-8	E440	969 mg/kg	105	70.0	130	----
QC-1605872-003	MRCA-21	Iron	7439-89-6	E440	32700 mg/kg	105	70.0	130	----
QC-1605872-003	MRCA-21	Lead	7439-92-1	E440	919 mg/kg	98.9	70.0	130	----
QC-1605872-003	MRCA-21	Lithium	7439-93-2	E440	47.3 mg/kg	107	70.0	130	----
QC-1605872-003	MRCA-21	Magnesium	7439-95-4	E440	7780 mg/kg	109	70.0	130	----
QC-1605872-003	MRCA-21	Manganese	7439-96-5	E440	8640 mg/kg	106	70.0	130	----
QC-1605872-003	MRCA-21	Molybdenum	7439-98-7	E440	25.1 mg/kg	102	70.0	130	----
QC-1605872-003	MRCA-21	Nickel	7440-02-0	E440	1000 mg/kg	109	70.0	130	----
QC-1605872-003	MRCA-21	Phosphorus	7723-14-0	E440	660 mg/kg	122	70.0	130	----
QC-1605872-003	MRCA-21	Potassium	7440-09-7	E440	10800 mg/kg	106	70.0	130	----
QC-1605872-003	MRCA-21	Selenium	7782-49-2	E440	1.04 mg/kg	84.1	60.0	140	----
QC-1605872-003	MRCA-21	Silver	7440-22-4	E440	8.98 mg/kg	98.4	70.0	130	----
QC-1605872-003	MRCA-21	Sodium	7440-23-5	E440	1770 mg/kg	115	70.0	130	----
QC-1605872-003	MRCA-21	Strontium	7440-24-6	E440	41 mg/kg	104	70.0	130	----
QC-1605872-003	MRCA-21	Sulfur	7704-34-9	E440	3940 mg/kg	96.4	50.0	150	----
QC-1605872-003	MRCA-21	Thallium	7440-28-0	E440	0.907 mg/kg	99.9	70.0	130	----
QC-1605872-003	MRCA-21	Tin	7440-31-5	E440	3.79 mg/kg	102	40.0	160	----
QC-1605872-003	MRCA-21	Titanium	7440-32-6	E440	2790 mg/kg	108	70.0	130	----
QC-1605872-003	MRCA-21	Tungsten	7440-33-7	E440	6.99 mg/kg	121	70.0	130	----
QC-1605872-003	MRCA-21	Uranium	7440-61-1	E440	3.97 mg/kg	110	70.0	130	----
QC-1605872-003	MRCA-21	Vanadium	7440-62-2	E440	66.2 mg/kg	106	70.0	130	----

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 Work Order : VA24C0336
 Client : Reworld Renewable Burnaby, ULC
 Project : Weekly Bottom Ash - Suite



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: 1605872) - continued									
QC-1605872-003	MRCA-21	Zinc	7440-66-6	E440	828 mg/kg	107	70.0	130	----
QC-1605872-003	MRCA-21	Zirconium	7440-67-7	E440	6.91 mg/kg	110	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="radio"/> Regular (Standard Turnaround Times - Business Days)			
Contact:	Nicole Victor / Dan Skrypnyk	<input checked="" type="checkbox"/> PDF	<input type="checkbox"/> Excel	<input type="checkbox"/> Digital	<input type="checkbox"/> Fax	<input type="radio"/> Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT	
Address:	5150 Riverbend Drive Bumaby BC	Email 1:	nvictor@covanta.com		<input type="radio"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT		
Phone:	604-521-1025	Fax:	dskrypnyk@covanta.com		<input type="radio"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT		
	<input type="checkbox"/> Yes <input type="checkbox"/> No	Email 2:		Analysis Request			
		Email 3:					
		brent.kirkpatrick@metrovancover.org					
		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 #:						Number of Containers
Hardcopy of Invoice with Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	PO / AFE: PO#	46093 Weekly Bottom Ash - Suite					
Company:		LSD:	(includes 2:1 pH)					
Contact:		Quote #:						
Address:		ALS Contact:						
Phone:		Sampler:						
Lab Work Order #	C0336							
(lab use only)								

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
BA2432-A-1		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-2		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-3		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-4		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-5		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-6		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-7		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-8		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-9		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-10		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-11		07-Aug-24	9:00	Soil	X	X		X	1
BA2432-A-12		07-Aug-24	9:00	Soil	X	X		X	1

Environmental Division
 Vancouver
 Work Order Reference
VA24C0336

Telephone : +1 604 263 4188

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
	13-Aug-24	08:00	JL	13-8-24	1300	20, 20 °C				