

## Bottom Ash Data

2020 Week 8

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The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on March 3, 2020. The data represents bottom ash composite results for week 8 of 2020 (February 16, 2020 to February 22, 2020).

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

## CERTIFICATE OF ANALYSIS

**Work Order** : **VA20A2278**  
**Client** : **Covanta Burnaby Renewable Energy, ULC**  
**Contact** : Steve McKinney  
**Address** : 5150 Riverbend Drive  
                   Burnaby BC Canada V3N 4V3  
**Telephone** : 604 521 1025  
**Project** : Weekly Bottom Ash - Suite  
**PO** : VANCO-0000049378  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** : ----  
**Quote number** : Standing Offer  
**No. of samples received** : 12  
**No. of samples analysed** : 12

**Page** : 1 of 11  
**Laboratory** : Vancouver - Environmental  
**Account Manager** : Brent Mack  
**Address** : 8081 Lougheed Highway  
                   Burnaby BC Canada V5A 1W9  
**Telephone** : +1 604 253 4188  
**Date Samples Received** : 25-Feb-2020 12:05  
**Date Analysis Commenced** : 25-Feb-2020  
**Issue Date** : 02-Mar-2020 16:30

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>
Evan Ben-Oliel	Metal Analyst	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kinny Wu	Laboratory Analyst	Metals, Burnaby, British Columbia
Ophelia Chiu	Supervisor - Organics Instrumentation	Organics, 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 in reports identified as "Preliminary Report" are considered authorized for use.



## Analytical Results

Sub-Matrix: Soil  
 (Matrix: Soil)

Client sample ID

					BA2008-A-1	BA2008-A-2	BA2008-A-3	BA2008-A-4	BA2008-A-5
Client sampling date / time					19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-001	VA20A2278-002	VA20A2278-003	VA20A2278-004	VA20A2278-005
					Result	Result	Result	Result	Result
<b>Physical Tests</b>									
moisture	----	E144	0.25	%	21.8	22.9	23.2	22.7	20.1
pH (1:2 soil:water)	----	E108	0.10	pH units	12.2	12.1	12.1	12.2	12.2
<b>Metals</b>									
aluminum	7429-90-5	E440	50	mg/kg	34800	31900	27400	34800	32700
antimony	7440-36-0	E440	0.10	mg/kg	76.1	85.3	121	101	88.0
arsenic	7440-38-2	E440	0.10	mg/kg	19.3	18.4	18.0	21.6	16.8
barium	7440-39-3	E440	0.50	mg/kg	487	503	482	610	538
beryllium	7440-41-7	E440	0.10	mg/kg	0.34	0.35	0.36	0.36	0.36
bismuth	7440-69-9	E440	0.20	mg/kg	3.92	14.5	6.21	4.29	4.23
boron	7440-42-8	E440	5.0	mg/kg	154	178	205	196	216
cadmium	7440-43-9	E440	0.020	mg/kg	7.53	8.49	9.10	6.92	7.45
calcium	7440-70-2	E440	50	mg/kg	118000	117000	127000	110000	121000
chromium	7440-47-3	E440	0.50	mg/kg	120	111	118	126	113
cobalt	7440-48-4	E440	0.10	mg/kg	38.9	19.4	880	16.4	17.9
copper	7440-50-8	E440	0.50	mg/kg	1510	28100	3370	4000	2460
iron	7439-89-6	E440	50	mg/kg	48200	50500	49500	77400	61700
lead	7439-92-1	E440	0.50	mg/kg	390	562	991	486	558
lithium	7439-93-2	E440	2.0	mg/kg	13.0	15.4	52.0	58.4	14.0
magnesium	7439-95-4	E440	20	mg/kg	11800	11400	11100	10900	11900
manganese	7439-96-5	E440	1.0	mg/kg	735	879	744	1930	745
mercury	7439-97-6	E510	0.0500	mg/kg	0.0510	0.0761	0.0656	0.0658	0.103
molybdenum	7439-98-7	E440	0.10	mg/kg	13.2	13.0	14.9	56.3	16.4
nickel	7440-02-0	E440	0.50	mg/kg	156	77.6	170	90.1	102
phosphorus	7723-14-0	E440	50	mg/kg	10200	9180	9440	8340	10400
potassium	7440-09-7	E440	100	mg/kg	3440	3560	3390	3480	3760
selenium	7782-49-2	E440	0.20	mg/kg	0.25	0.23	0.25	7.52	0.26
silver	7440-22-4	E440	0.10	mg/kg	4.47	5.87	3.69	8.10	4.17
sodium	7440-23-5	E440	50	mg/kg	12300	12600	12600	12800	13200
strontium	7440-24-6	E440	0.50	mg/kg	277	280	293	278	463
sulfur	7704-34-9	E440	1000	mg/kg	9900	10000	11600	9400	10900



## Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2008-A-1	BA2008-A-2	BA2008-A-3	BA2008-A-4	BA2008-A-5
Client sampling date / time					19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-001	VA20A2278-002	VA20A2278-003	VA20A2278-004	VA20A2278-005	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
thallium	7440-28-0	E440	0.050	mg/kg	0.065	0.071	0.083	0.082	0.080	
tin	7440-31-5	E440	2.0	mg/kg	80.6	95.3	904	94.8	297	
titanium	7440-32-6	E440	1.0	mg/kg	343	327	214	449	274	
tungsten	7440-33-7	E440	0.50	mg/kg	4.48	4.74	4.52	3.70	4.14	
uranium	7440-61-1	E440	0.050	mg/kg	4.35	4.52	4.75	4.08	4.61	
vanadium	7440-62-2	E440	0.20	mg/kg	38.6	38.0	40.8	38.6	39.8	
zinc	7440-66-6	E440	2.0	mg/kg	2960	3500	4310	4440	3180	
zirconium	7440-67-7	E440	1.0	mg/kg	1.8	1.5	1.7	1.1	1.7	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	12.1	12.0	12.0	12.1	12.0	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.04	8.68	8.65	9.39	8.99	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.91	2.91	2.91	2.91	2.91	
pH, TCLP final	----	EPP444	0.010	pH units	6.19	6.36	6.17	6.39	5.88	
antimony, TCLP	7440-36-0	E444	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
arsenic, TCLP	7440-38-2	E444	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	<2.5	<2.5	<2.5	<2.5	
beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025	
boron, TCLP	7440-42-8	E444	0.50	mg/L	2.35	2.25	2.46	2.22	2.40	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.126	0.233	0.105	0.224	0.121	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	1940	1890	1910	1880	1680	
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.651	0.644	0.408	0.837	0.700	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.846	0.681	0.879	0.533	0.729	
iron, TCLP	7439-89-6	E444	5.0	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
magnesium, TCLP	7439-95-4	E444	0.50	mg/L	154	157	138	158	138	
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	
nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.35	0.44	0.28	0.31	0.46	
selenium, TCLP	7782-49-2	E444	1.00	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00	
silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
thallium, TCLP	7440-28-0	E444	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	



## Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2008-A-1	BA2008-A-2	BA2008-A-3	BA2008-A-4	BA2008-A-5
Client sampling date / time					19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-001	VA20A2278-002	VA20A2278-003	VA20A2278-004	VA20A2278-005	
					Result	Result	Result	Result	Result	
<b>TCLP Metals</b>										
vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
zinc, TCLP	7440-66-6	E444	0.50	mg/L	20.8	20.0	21.1	17.3	40.8	

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



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2008-A-6	BA2008-A-7	BA2008-A-8	BA2008-A-9	BA2008-A-10
(Matrix: Soil)					Client sampling date / time	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-006	VA20A2278-007	VA20A2278-008	VA20A2278-009	VA20A2278-010	
					Result	Result	Result	Result	Result	
<b>Physical Tests</b>										
moisture	----	E144	0.25	%	23.0	23.2	21.2	21.3	22.9	
pH (1:2 soil:water)	----	E108	0.10	pH units	12.0	12.0	12.3	12.1	12.0	
<b>Metals</b>										
aluminum	7429-90-5	E440	50	mg/kg	36600	41400	38900	28100	32100	
antimony	7440-36-0	E440	0.10	mg/kg	68.8	76.1	85.8	74.4	63.5	
arsenic	7440-38-2	E440	0.10	mg/kg	15.0	16.4	19.9	15.5	16.1	
barium	7440-39-3	E440	0.50	mg/kg	397	559	531	500	489	
beryllium	7440-41-7	E440	0.10	mg/kg	0.32	0.42	0.39	0.35	0.37	
bismuth	7440-69-9	E440	0.20	mg/kg	3.49	4.21	5.21	3.70	4.16	
boron	7440-42-8	E440	5.0	mg/kg	155	171	182	278	134	
cadmium	7440-43-9	E440	0.020	mg/kg	7.93	7.67	9.32	7.33	9.05	
calcium	7440-70-2	E440	50	mg/kg	109000	119000	132000	121000	118000	
chromium	7440-47-3	E440	0.50	mg/kg	112	106	158	110	107	
cobalt	7440-48-4	E440	0.10	mg/kg	23.5	2060	22.9	32.0	19.4	
copper	7440-50-8	E440	0.50	mg/kg	1350	1490	2370	6810	2760	
iron	7439-89-6	E440	50	mg/kg	41200	36600	55000	60500	48100	
lead	7439-92-1	E440	0.50	mg/kg	448	517	850	1290	370	
lithium	7439-93-2	E440	2.0	mg/kg	15.7	19.7	33.0	14.3	14.8	
magnesium	7439-95-4	E440	20	mg/kg	10500	11100	11700	10300	10900	
manganese	7439-96-5	E440	1.0	mg/kg	848	857	828	736	715	
mercury	7439-97-6	E510	0.0500	mg/kg	0.0649	0.0585	0.0653	0.0598	0.0614	
molybdenum	7439-98-7	E440	0.10	mg/kg	14.6	29.2	17.7	19.9	12.7	
nickel	7440-02-0	E440	0.50	mg/kg	91.1	72.4	175	97.9	116	
phosphorus	7723-14-0	E440	50	mg/kg	8160	10200	9900	10000	9210	
potassium	7440-09-7	E440	100	mg/kg	3490	3820	3820	3520	3090	
selenium	7782-49-2	E440	0.20	mg/kg	0.22	0.26	0.30	<0.20	0.20	
silver	7440-22-4	E440	0.10	mg/kg	2.95	3.16	3.81	3.42	3.53	
sodium	7440-23-5	E440	50	mg/kg	12600	13400	13200	12800	11900	
strontium	7440-24-6	E440	0.50	mg/kg	257	283	483	268	256	
sulfur	7704-34-9	E440	1000	mg/kg	9500	10200	12100	9600	9200	
thallium	7440-28-0	E440	0.050	mg/kg	0.071	0.074	0.083	0.063	0.068	



## Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2008-A-6	BA2008-A-7	BA2008-A-8	BA2008-A-9	BA2008-A-10
Client sampling date / time					19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-006	VA20A2278-007	VA20A2278-008	VA20A2278-009	VA20A2278-010	
					Result	Result	Result	Result	Result	
<b>Metals</b>										
tin	7440-31-5	E440	2.0	mg/kg	104	456	112	103	81.3	
titanium	7440-32-6	E440	1.0	mg/kg	501	794	877	297	282	
tungsten	7440-33-7	E440	0.50	mg/kg	4.52	4.47	7.26	4.91	3.97	
uranium	7440-61-1	E440	0.050	mg/kg	4.32	4.65	5.20	4.36	4.29	
vanadium	7440-62-2	E440	0.20	mg/kg	37.5	43.2	45.3	37.3	38.4	
zinc	7440-66-6	E440	2.0	mg/kg	3490	5500	3750	4040	2800	
zirconium	7440-67-7	E440	1.0	mg/kg	1.4	1.9	1.5	1.4	1.7	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.9	12.0	12.0	12.1	12.0	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	7.94	8.63	8.27	9.20	9.23	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.91	2.91	2.91	2.91	2.91	
pH, TCLP final	----	EPP444	0.010	pH units	5.75	5.98	5.94	5.97	6.07	
antimony, TCLP	7440-36-0	E444	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
arsenic, TCLP	7440-38-2	E444	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	<2.5	<2.5	<2.5	<2.5	
beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025	
boron, TCLP	7440-42-8	E444	0.50	mg/L	2.01	2.00	2.20	2.20	2.35	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.106	0.091	0.121	0.115	0.108	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	1630	1740	1800	1900	1870	
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	<0.25	<0.25	<0.25	
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.495	0.364	0.790	0.822	0.618	
copper, TCLP	7440-50-8	E444	0.050	mg/L	1.17	0.927	0.882	0.849	0.609	
iron, TCLP	7439-89-6	E444	5.0	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	<0.25	0.45	<0.25	<0.25	
magnesium, TCLP	7439-95-4	E444	0.50	mg/L	126	139	148	151	144	
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	
nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.31	0.40	0.55	0.38	0.38	
selenium, TCLP	7782-49-2	E444	1.00	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00	
silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
thallium, TCLP	7440-28-0	E444	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	





## Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2008-A-6	BA2008-A-7	BA2008-A-8	BA2008-A-9	BA2008-A-10
Client sampling date / time					19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00	19-Feb-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-006	VA20A2278-007	VA20A2278-008	VA20A2278-009	VA20A2278-010	
					Result	Result	Result	Result	Result	
<b>TCLP Metals</b>										
zinc, TCLP	7440-66-6	E444	0.50	mg/L	26.6	20.9	38.7	46.6	44.1	

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



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2008-A-11	BA2008-A-12	----	----	----
(Matrix: Soil)										
Client sampling date / time						19-Feb-2020 09:00	19-Feb-2020 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-011	VA20A2278-012	-----	-----	-----	-----
					Result	Result	---	---	---	---
<b>Physical Tests</b>										
moisture	----	E144	0.25	%	21.9	20.0	----	----	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	11.9	12.0	----	----	----	----
<b>Metals</b>										
aluminum	7429-90-5	E440	50	mg/kg	31400	33700	----	----	----	----
antimony	7440-36-0	E440	0.10	mg/kg	73.2	74.7	----	----	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	19.5	15.5	----	----	----	----
barium	7440-39-3	E440	0.50	mg/kg	490	516	----	----	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.32	0.36	----	----	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	5.15	3.73	----	----	----	----
boron	7440-42-8	E440	5.0	mg/kg	154	196	----	----	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	7.77	6.62	----	----	----	----
calcium	7440-70-2	E440	50	mg/kg	116000	110000	----	----	----	----
chromium	7440-47-3	E440	0.50	mg/kg	109	101	----	----	----	----
cobalt	7440-48-4	E440	0.10	mg/kg	22.5	83.3	----	----	----	----
copper	7440-50-8	E440	0.50	mg/kg	1590	13500	----	----	----	----
iron	7439-89-6	E440	50	mg/kg	46100	43600	----	----	----	----
lead	7439-92-1	E440	0.50	mg/kg	558	368	----	----	----	----
lithium	7439-93-2	E440	2.0	mg/kg	14.3	14.2	----	----	----	----
magnesium	7439-95-4	E440	20	mg/kg	11400	11500	----	----	----	----
manganese	7439-96-5	E440	1.0	mg/kg	805	707	----	----	----	----
mercury	7439-97-6	E510	0.0500	mg/kg	0.0732	0.0514	----	----	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	20.4	12.6	----	----	----	----
nickel	7440-02-0	E440	0.50	mg/kg	99.4	93.9	----	----	----	----
phosphorus	7723-14-0	E440	50	mg/kg	8600	9730	----	----	----	----
potassium	7440-09-7	E440	100	mg/kg	3630	3210	----	----	----	----
selenium	7782-49-2	E440	0.20	mg/kg	0.21	0.21	----	----	----	----
silver	7440-22-4	E440	0.10	mg/kg	14.9	2.83	----	----	----	----
sodium	7440-23-5	E440	50	mg/kg	13300	11900	----	----	----	----
strontium	7440-24-6	E440	0.50	mg/kg	260	294	----	----	----	----
sulfur	7704-34-9	E440	1000	mg/kg	9800	9000	----	----	----	----
thallium	7440-28-0	E440	0.050	mg/kg	0.086	0.064	----	----	----	----



## Analytical Results

Sub-Matrix: Soil					Client sample ID	BA2008-A-11	BA2008-A-12	----	----	----
(Matrix: Soil)					Client sampling date / time	19-Feb-2020 09:00	19-Feb-2020 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-011	VA20A2278-012	-----	-----	-----	
					Result	Result	---	---	---	
<b>Metals</b>										
tin	7440-31-5	E440	2.0	mg/kg	126	94.4	----	----	----	
titanium	7440-32-6	E440	1.0	mg/kg	242	322	----	----	----	
tungsten	7440-33-7	E440	0.50	mg/kg	3.75	4.53	----	----	----	
uranium	7440-61-1	E440	0.050	mg/kg	4.53	4.33	----	----	----	
vanadium	7440-62-2	E440	0.20	mg/kg	38.8	37.6	----	----	----	
zinc	7440-66-6	E440	2.0	mg/kg	2800	2350	----	----	----	
zirconium	7440-67-7	E440	1.0	mg/kg	1.9	1.4	----	----	----	
<b>TCLP Metals</b>										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	12.0	12.0	----	----	----	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	8.45	9.05	----	----	----	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.91	2.91	----	----	----	
pH, TCLP final	----	EPP444	0.010	pH units	5.88	6.56	----	----	----	
antimony, TCLP	7440-36-0	E444	1.0	mg/L	<1.0	<1.0	----	----	----	
arsenic, TCLP	7440-38-2	E444	1.0	mg/L	<1.0	<1.0	----	----	----	
barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	<2.5	----	----	----	
beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	<0.025	----	----	----	
boron, TCLP	7440-42-8	E444	0.50	mg/L	2.34	2.26	----	----	----	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.116	0.198	----	----	----	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	1820	1810	----	----	----	
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	----	----	----	
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.384	0.405	----	----	----	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.995	0.610	----	----	----	
iron, TCLP	7439-89-6	E444	5.0	mg/L	<5.0	<5.0	----	----	----	
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	<0.25	----	----	----	
magnesium, TCLP	7439-95-4	E444	0.50	mg/L	152	153	----	----	----	
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	----	----	----	
nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.36	0.36	----	----	----	
selenium, TCLP	7782-49-2	E444	1.00	mg/L	<1.00	<1.00	----	----	----	
silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	<0.050	----	----	----	
thallium, TCLP	7440-28-0	E444	1.0	mg/L	<1.0	<1.0	----	----	----	
vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	<0.15	----	----	----	



**Analytical Results**

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA2008-A-11	BA2008-A-12	----	----	----
Client sampling date / time					19-Feb-2020 09:00	19-Feb-2020 09:00	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	VA20A2278-011	VA20A2278-012	-----	-----	-----	
TCLP Metals					Result	Result	---	---	---	
zinc, TCLP	7440-66-6	E444	0.50	mg/L	22.6	28.2	----	----	----	

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