

Bottom Ash Data

2019 Week 52

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on January 9, 2020. The data represents bottom ash composite results for week 52 of 2019 (December 22, 2019 to December 28, 2019).

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

CERTIFICATE OF ANALYSIS

Work Order : **VA19A1099**
Client : **Covanta Burnaby R.E., ULC**
Contact : Steve McKinney
Address : 5150 Riverbend Drive
 Burnaby BC Canada V3N 4V3
Telephone : 604 521 1025
Project : Weekly Bottom Ash - Suite
PO : VANCO-0000048466
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 : 31-Dec-2019 11:10
Date Analysis Commenced : 02-Jan-2020
Issue Date : 07-Jan-2020 17:06

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>
Aaron Yu	Laboratory Analyst	Metals, Burnaby, British Columbia
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Brieanna Allen	Department Manager - Organics	Organics, Burnaby, British Columbia
Cristina Alexandre	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kinny Wu	Laboratory Analyst	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 in reports identified as "**Preliminary Report**" are considered authorized for use.



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA1952-A-1	BA1952-A-2	BA1952-A-3	BA1952-A-4	BA1952-A-5
(Matrix: Soil)					Client sampling date / time	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-001	VA19A1099-002	VA19A1099-003	VA19A1099-004	VA19A1099-005	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	26.1	25.0	26.5	27.5	24.9	
pH (1:2 soil:water)	----	E108	0.10	pH units	10.8	10.9	10.8	10.8	10.8	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	42000	34800	47900	36200	40300	
antimony	7440-36-0	E440	0.10	mg/kg	271	178	135	119	122	
arsenic	7440-38-2	E440	0.10	mg/kg	18.7	18.4	19.3	16.9	19.4	
barium	7440-39-3	E440	0.50	mg/kg	486	511	480	437	435	
beryllium	7440-41-7	E440	0.10	mg/kg	0.52	0.34	0.38	0.38	0.35	
bismuth	7440-69-9	E440	0.20	mg/kg	10.2	7.62	13.2	6.35	7.91	
boron	7440-42-8	E440	5.0	mg/kg	153	226	232	172	219	
cadmium	7440-43-9	E440	0.020	mg/kg	14.2	23.2	10.8	32.6	9.17	
calcium	7440-70-2	E440	50	mg/kg	138000	126000	136000	129000	126000	
chromium	7440-47-3	E440	0.50	mg/kg	128	137	131	145	130	
cobalt	7440-48-4	E440	0.10	mg/kg	32.3	283	22.3	60.4	25.2	
copper	7440-50-8	E440	0.50	mg/kg	3620	8580	2700	1620	2300	
iron	7439-89-6	E440	50	mg/kg	49400	53800	56800	52800	54200	
lead	7439-92-1	E440	0.50	mg/kg	2040	285	1790	484	604	
lithium	7439-93-2	E440	2.0	mg/kg	19.9	25.1	19.8	25.1	19.7	
magnesium	7439-95-4	E440	20	mg/kg	12000	11600	12200	11300	11200	
manganese	7439-96-5	E440	1.0	mg/kg	750	695	796	799	767	
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	
molybdenum	7439-98-7	E440	0.10	mg/kg	18.7	20.3	25.8	17.7	18.8	
nickel	7440-02-0	E440	0.50	mg/kg	544	260	168	302	123	
phosphorus	7723-14-0	E440	50	mg/kg	14600	12500	13600	12100	10200	
potassium	7440-09-7	E440	100	mg/kg	6400	5540	5600	5700	5170	
selenium	7782-49-2	E440	0.20	mg/kg	0.39	0.35	0.40	0.39	0.37	
silver	7440-22-4	E440.Ag	0.10	mg/kg	----	----	----	5.89	----	
silver	7440-22-4	E440	0.10	mg/kg	16.3	5.46	8.01	----	5.23	
sodium	7440-23-5	E440	50	mg/kg	15300	15600	15800	15200	14200	
strontium	7440-24-6	E440	0.50	mg/kg	317	421	300	312	294	



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil)					BA1952-A-1	BA1952-A-2	BA1952-A-3	BA1952-A-4	BA1952-A-5
Client sampling date / time					25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-001	VA19A1099-002	VA19A1099-003	VA19A1099-004	VA19A1099-005
					Result	Result	Result	Result	Result
Metals									
sulfur	7704-34-9	E440	1000	mg/kg	13700	13500	14200	12500	13400
thallium	7440-28-0	E440	0.050	mg/kg	0.054	0.055	0.054	<0.050	<0.050
tin	7440-31-5	E440	2.0	mg/kg	933	132	270	103	390
titanium	7440-32-6	E440	1.0	mg/kg	393	586	668	301	462
tungsten	7440-33-7	E440	0.50	mg/kg	12.9	11.8	32.4	10.2	16.9
uranium	7440-61-1	E440	0.050	mg/kg	5.59	5.06	5.35	5.20	4.73
vanadium	7440-62-2	E440	0.20	mg/kg	43.1	40.3	46.0	40.6	39.8
zinc	7440-66-6	E440	2.0	mg/kg	6080	18300	4120	3440	4170
zirconium	7440-67-7	E440	1.0	mg/kg	2.4	2.1	3.1	3.3	2.6
TCLP Metals									
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.6	11.6	11.6	11.6	11.6
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.09	9.81	9.65	9.81	9.91
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.93	2.93	2.93	2.93	2.93
pH, TCLP final	----	EPP444	0.010	pH units	6.02	6.02	6.32	6.22	6.51
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	2.23	2.45	2.41	2.38	2.54
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.145	0.212	0.164	0.141	0.406
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2190	2070	2170	2200	2130
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	1.92	0.524	0.470	0.854	0.531
copper, TCLP	7440-50-8	E444	0.050	mg/L	1.19	1.20	1.03	0.529	0.498
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	0.27	<0.25	<0.25	<0.25	<0.25
magnesium, TCLP	7439-95-4	E444	0.50	mg/L	157	146	163	154	139
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	0.46	0.46	0.46	0.43	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



Analytical Results

Sub-Matrix: Soil (Matrix: Soil)					Client sample ID	BA1952-A-1	BA1952-A-2	BA1952-A-3	BA1952-A-4	BA1952-A-5
Client sampling date / time					25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-001	VA19A1099-002	VA19A1099-003	VA19A1099-004	VA19A1099-005	
					Result	Result	Result	Result	Result	
TCLP Metals										
thallium, TCLP	7440-28-0	E444	1.0	mg/L	<1.0	<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	<0.15
zinc, TCLP	7440-66-6	E444	0.50	mg/L	37.0	56.3	30.1	37.4	28.5	

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



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil)					BA1952-A-6	BA1952-A-7	BA1952-A-8	BA1952-A-9	BA1952-A-10
Client sampling date / time					25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-006	VA19A1099-007	VA19A1099-008	VA19A1099-009	VA19A1099-010
					Result	Result	Result	Result	Result
Physical Tests									
moisture	----	E144	0.25	%	27.4	23.4	26.9	25.1	25.0
pH (1:2 soil:water)	----	E108	0.10	pH units	10.7	10.8	10.8	10.8	10.9
Metals									
aluminum	7429-90-5	E440	50	mg/kg	39500	46900	47300	52300	40200
antimony	7440-36-0	E440	0.10	mg/kg	124	172	131	121	138
arsenic	7440-38-2	E440	0.10	mg/kg	15.7	23.2	18.0	19.1	20.4
barium	7440-39-3	E440	0.50	mg/kg	396	416	507	552	509
beryllium	7440-41-7	E440	0.10	mg/kg	0.35	0.36	0.37	0.36	0.37
bismuth	7440-69-9	E440	0.20	mg/kg	5.59	16.4	15.6	6.82	6.12
boron	7440-42-8	E440	5.0	mg/kg	169	261	194	168	157
cadmium	7440-43-9	E440	0.020	mg/kg	10.3	11.8	15.8	13.1	10.1
calcium	7440-70-2	E440	50	mg/kg	121000	130000	138000	126000	141000
chromium	7440-47-3	E440	0.50	mg/kg	126	141	111	128	131
cobalt	7440-48-4	E440	0.10	mg/kg	19.2	47.4	135	43.9	33.8
copper	7440-50-8	E440	0.50	mg/kg	4860	9310	2740	2510	3680
iron	7439-89-6	E440	50	mg/kg	51600	61600	58000	70300	55400
lead	7439-92-1	E440	0.50	mg/kg	524	721	765	366	363
lithium	7439-93-2	E440	2.0	mg/kg	16.7	18.6	18.9	18.8	18.4
magnesium	7439-95-4	E440	20	mg/kg	11400	12000	11900	11200	14800
manganese	7439-96-5	E440	1.0	mg/kg	736	944	814	988	821
mercury	7439-97-6	E510	0.0500	mg/kg	0.114	<0.0500	<0.0500	<0.0500	<0.0500
molybdenum	7439-98-7	E440	0.10	mg/kg	15.8	28.7	17.2	17.7	17.8
nickel	7440-02-0	E440	0.50	mg/kg	318	1620	198	93.4	121
phosphorus	7723-14-0	E440	50	mg/kg	12100	13100	11100	12300	14000
potassium	7440-09-7	E440	100	mg/kg	5780	5700	5090	5030	5400
selenium	7782-49-2	E440	0.20	mg/kg	0.39	0.35	0.31	0.35	0.37
silver	7440-22-4	E440	0.10	mg/kg	7.98	9.13	6.15	6.41	22.7
sodium	7440-23-5	E440	50	mg/kg	15500	15400	15000	15000	15800
strontium	7440-24-6	E440	0.50	mg/kg	293	345	308	309	322
sulfur	7704-34-9	E440	1000	mg/kg	13600	14300	12700	13200	13400
thallium	7440-28-0	E440	0.050	mg/kg	0.052	0.053	0.055	<0.050	<0.050



Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil)					BA1952-A-6	BA1952-A-7	BA1952-A-8	BA1952-A-9	BA1952-A-10
Client sampling date / time					25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-006	VA19A1099-007	VA19A1099-008	VA19A1099-009	VA19A1099-010
					Result	Result	Result	Result	Result
Metals									
tin	7440-31-5	E440	2.0	mg/kg	108	262	114	118	104
titanium	7440-32-6	E440	1.0	mg/kg	306	414	550	901	547
tungsten	7440-33-7	E440	0.50	mg/kg	9.94	14.3	15.0	13.8	21.9
uranium	7440-61-1	E440	0.050	mg/kg	4.87	5.67	5.16	5.06	5.36
vanadium	7440-62-2	E440	0.20	mg/kg	40.2	41.7	40.0	43.0	41.4
zinc	7440-66-6	E440	2.0	mg/kg	4570	12100	5460	5260	3910
zirconium	7440-67-7	E440	1.0	mg/kg	2.5	3.0	3.0	3.2	2.8
TCLP Metals									
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.6	11.6	11.6	11.7	11.7
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.57	9.81	9.79	9.76	9.84
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.93	2.93	2.93	2.93	2.93
pH, TCLP final	----	EPP444	0.010	pH units	6.37	6.21	6.19	6.42	6.53
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	2.91	2.70	2.59	2.51	2.34
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.133	0.229	0.552	0.133	0.128
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2200	2110	2170	2110	2100
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	0.362	0.426	0.734	1.26	0.620
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.784	1.03	1.34	0.924	0.943
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	159	159	156	144	146
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	0.38	0.52	0.48	0.52	0.56
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	BA1952-A-6	BA1952-A-7	BA1952-A-8	BA1952-A-9	BA1952-A-10
Client sampling date / time					25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00	25-Dec-2019 09:00
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-006	VA19A1099-007	VA19A1099-008	VA19A1099-009	VA19A1099-010	
					Result	Result	Result	Result	Result	
TCLP Metals										
zinc, TCLP	7440-66-6	E444	0.50	mg/L	57.3	45.0	49.8	41.5	26.7	

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



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA1952-A-11	BA1952-A-12	----	----	----
(Matrix: Soil)										
Client sampling date / time						25-Dec-2019 09:00	25-Dec-2019 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-011	VA19A1099-012	-----	-----	-----	-----
					Result	Result	---	---	---	---
Physical Tests										
moisture	----	E144	0.25	%	24.8	27.8	----	----	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	10.9	10.8	----	----	----	----
Metals										
aluminum	7429-90-5	E440	50	mg/kg	43800	35400	----	----	----	----
antimony	7440-36-0	E440	0.10	mg/kg	126	116	----	----	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	19.6	16.4	----	----	----	----
barium	7440-39-3	E440	0.50	mg/kg	475	369	----	----	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.38	0.37	----	----	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	6.40	13.9	----	----	----	----
boron	7440-42-8	E440	5.0	mg/kg	203	191	----	----	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	15.2	9.84	----	----	----	----
calcium	7440-70-2	E440	50	mg/kg	133000	126000	----	----	----	----
chromium	7440-47-3	E440	0.50	mg/kg	141	208	----	----	----	----
cobalt	7440-48-4	E440	0.10	mg/kg	314	75.1	----	----	----	----
copper	7440-50-8	E440	0.50	mg/kg	3030	4780	----	----	----	----
iron	7439-89-6	E440	50	mg/kg	56100	46700	----	----	----	----
lead	7439-92-1	E440	0.50	mg/kg	573	3200	----	----	----	----
lithium	7439-93-2	E440	2.0	mg/kg	38.9	17.2	----	----	----	----
magnesium	7439-95-4	E440	20	mg/kg	11600	12100	----	----	----	----
manganese	7439-96-5	E440	1.0	mg/kg	1850	1180	----	----	----	----
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	----	----	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	19.5	15.7	----	----	----	----
nickel	7440-02-0	E440	0.50	mg/kg	128	237	----	----	----	----
phosphorus	7723-14-0	E440	50	mg/kg	11900	10700	----	----	----	----
potassium	7440-09-7	E440	100	mg/kg	5570	5150	----	----	----	----
selenium	7782-49-2	E440	0.20	mg/kg	0.34	0.26	----	----	----	----
silver	7440-22-4	E440	0.10	mg/kg	7.09	10.9	----	----	----	----
sodium	7440-23-5	E440	50	mg/kg	15700	14600	----	----	----	----
strontium	7440-24-6	E440	0.50	mg/kg	344	320	----	----	----	----
sulfur	7704-34-9	E440	1000	mg/kg	13400	12500	----	----	----	----
thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	----	----	----	----



Analytical Results

Sub-Matrix: Soil					Client sample ID	BA1952-A-11	BA1952-A-12	----	----	----
(Matrix: Soil)					Client sampling date / time	25-Dec-2019 09:00	25-Dec-2019 09:00	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-011	VA19A1099-012	-----	-----	-----	
					Result	Result	---	---	---	
Metals										
tin	7440-31-5	E440	2.0	mg/kg	264	207	----	----	----	
titanium	7440-32-6	E440	1.0	mg/kg	583	477	----	----	----	
tungsten	7440-33-7	E440	0.50	mg/kg	13.3	11.2	----	----	----	
uranium	7440-61-1	E440	0.050	mg/kg	5.29	4.82	----	----	----	
vanadium	7440-62-2	E440	0.20	mg/kg	42.6	40.1	----	----	----	
zinc	7440-66-6	E440	2.0	mg/kg	4140	4280	----	----	----	
zirconium	7440-67-7	E440	1.0	mg/kg	3.1	2.5	----	----	----	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.7	11.6	----	----	----	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	9.95	9.94	----	----	----	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.93	2.93	----	----	----	
pH, TCLP final	----	EPP444	0.010	pH units	6.51	6.53	----	----	----	
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	2.20	2.43	----	----	----	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	0.123	0.142	----	----	----	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2020	2180	----	----	----	
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	----	----	----	
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	0.430	0.650	----	----	----	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.964	0.827	----	----	----	
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	137	142	----	----	----	
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	----	----	----	
nickel, TCLP	7440-02-0	E444	0.25	mg/L	0.45	0.46	----	----	----	
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	BA1952-A-11	BA1952-A-12	----	----	----
Client sampling date / time					25-Dec-2019 09:00	25-Dec-2019 09:00	---	---	---	
Analyte	CAS Number	Method	LOR	Unit	VA19A1099-011	VA19A1099-012	-----	-----	-----	
TCLP Metals					Result	Result	---	---	---	
zinc, TCLP	7440-66-6	E444	0.50	mg/L	34.0	22.2	----	----	----	

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