

Bottom Ash Data

2020 Week 14

The following analytical report was sent to the Ministry of Environment and Climate Change Strategy on April 20, 2020. The data represents bottom ash composite results for week 14 of 2020 (March 29, 2020 to April 4, 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 : VA20A4530
Amendment : 1
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 : 14
No. of samples analysed : 14

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 : 07-Apr-2020 11:05
Date Analysis Commenced : 08-Apr-2020
Issue Date : 20-Apr-2020 16:14

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.

Table with 3 columns: Signatories, Position, Laboratory Department. Rows include Angela Ren (Team Leader - Metals), Brieanna Allen (Department Manager - Organics), Evan Ben-Oliel (Metal Analyst), Robin Weeks (Team Leader - Metals), Robin Weeks (Team Leader - Metals), and Shaneel Dayal (Metal Analyst).



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	BA2014-A-1	BA2014-A-2	BA2014-A-3	BA2014-A-4	BA2014-A-5
(Matrix: Soil/Solid)					Client sampling date / time	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-001	VA20A4530-002	VA20A4530-003	VA20A4530-004	VA20A4530-005	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	22.5	23.0	20.8	21.9	21.3	
pH (1:2 soil:water)	----	E108	0.10	pH units	11.6	11.8	11.6	11.6	11.7	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	27700	29300	26200	34900	27200	
antimony	7440-36-0	E440	0.10	mg/kg	274	310	343	333	320	
arsenic	7440-38-2	E440	0.10	mg/kg	43.6	48.3	47.5	49.1	48.4	
barium	7440-39-3	E440	0.50	mg/kg	604	564	567	548	554	
beryllium	7440-41-7	E440	0.10	mg/kg	0.42	0.46	0.37	0.36	0.75	
bismuth	7440-69-9	E440	0.20	mg/kg	11.5	15.4	13.1	14.5	13.3	
boron	7440-42-8	E440	5.0	mg/kg	192	329	161	184	163	
cadmium	7440-43-9	E440	0.020	mg/kg	22.4	32.4	34.0	48.9	33.0	
calcium	7440-70-2	E440	50	mg/kg	171000	169000	162000	171000	168000	
chromium	7440-47-3	E440	0.50	mg/kg	187	183	173	171	194	
cobalt	7440-48-4	E440	0.10	mg/kg	18.3	20.5	24.1	17.2	41.0	
copper	7440-50-8	E440	0.50	mg/kg	3260	5610	2140	2610	1890	
iron	7439-89-6	E440	50	mg/kg	70300	41400	49500	53200	62300	
lead	7439-92-1	E440	0.50	mg/kg	484	445	440	2250	545	
lithium	7439-93-2	E440	2.0	mg/kg	16.5	17.4	24.8	16.6	17.7	
magnesium	7439-95-4	E440	20	mg/kg	11300	10400	9400	8860	10200	
manganese	7439-96-5	E440	1.0	mg/kg	659	637	634	645	664	
mercury	7439-97-6	E510	0.0500	mg/kg	0.150	0.172	0.170	0.200	0.188	
molybdenum	7439-98-7	E440	0.10	mg/kg	33.2	39.9	40.8	27.2	37.5	
nickel	7440-02-0	E440	0.50	mg/kg	168	128	109	108	147	
phosphorus	7723-14-0	E440	50	mg/kg	9460	6310	6940	7440	6910	
potassium	7440-09-7	E440	100	mg/kg	6660	6510	6900	7150	7280	
selenium	7782-49-2	E440	0.20	mg/kg	0.88	1.00	0.93	0.97	1.02	
silver	7440-22-4	E440	0.10	mg/kg	9.58	16.0	9.11	12.4	13.6	
sodium	7440-23-5	E440	50	mg/kg	16000	15100	15600	16600	16700	
strontium	7440-24-6	E440	0.50	mg/kg	418	377	398	399	428	
sulfur	7704-34-9	E440	1000	mg/kg	12100	12600	12400	12400	12900	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2014-A-1	BA2014-A-2	BA2014-A-3	BA2014-A-4	BA2014-A-5
Client sampling date / time					01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-001	VA20A4530-002	VA20A4530-003	VA20A4530-004	VA20A4530-005	
					Result	Result	Result	Result	Result	
Metals										
thallium	7440-28-0	E440	0.050	mg/kg	0.056	0.055	0.054	0.069	0.061	
tin	7440-31-5	E440	2.0	mg/kg	1630	259	273	273	282	
titanium	7440-32-6	E440	1.0	mg/kg	511	1060	732	489	503	
tungsten	7440-33-7	E440	0.50	mg/kg	12.9	12.1	15.2	10.0	31.9	
uranium	7440-61-1	E440	0.050	mg/kg	3.64	3.38	3.43	3.47	3.55	
vanadium	7440-62-2	E440	0.20	mg/kg	38.0	39.8	69.0	38.0	36.5	
zinc	7440-66-6	E440	2.0	mg/kg	6230	6730	6370	8560	6400	
zirconium	7440-67-7	E440	1.0	mg/kg	1.4	1.1	1.2	1.6	1.3	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.7	11.9	11.9	11.8	11.9	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	10.6	10.8	10.6	10.7	10.4	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.89	2.89	2.89	2.89	2.89	
pH, TCLP final	----	EPP444	0.010	pH units	6.99	8.87	8.84	8.83	8.92	
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	1.99	2.07	1.88	1.90	1.90	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2500	2420	2450	2370	2420	
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	<0.050	<0.050	<0.050	<0.050	<0.050	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.229	0.234	0.217	0.219	0.228	
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	78.9	76.5	81.4	74.5	76.3	
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	<0.25	<0.25	<0.25	<0.25	<0.25	
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/Solid)					Client sample ID	BA2014-A-1	BA2014-A-2	BA2014-A-3	BA2014-A-4	BA2014-A-5
Client sampling date / time					01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-001	VA20A4530-002	VA20A4530-003	VA20A4530-004	VA20A4530-005	
					Result	Result	Result	Result	Result	
TCLP Metals										
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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2014-A-6	BA2014-A-7	BA2014-A-8	BA2014-A-9	BA2014-A-10
Client sampling date / time					01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-006	VA20A4530-007	VA20A4530-008	VA20A4530-009	VA20A4530-010	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	22.1	22.6	23.2	21.2	21.7	
pH (1:2 soil:water)	----	E108	0.10	pH units	11.7	11.6	11.6	11.7	11.7	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	27000	29800	30800	42100	30400	
antimony	7440-36-0	E440	0.10	mg/kg	338	295	281	301	328	
arsenic	7440-38-2	E440	0.10	mg/kg	46.6	40.7	41.6	53.8	55.9	
barium	7440-39-3	E440	0.50	mg/kg	539	549	533	590	552	
beryllium	7440-41-7	E440	0.10	mg/kg	0.39	0.31	0.36	0.33	0.38	
bismuth	7440-69-9	E440	0.20	mg/kg	17.5	12.1	12.4	15.0	15.1	
boron	7440-42-8	E440	5.0	mg/kg	196	223	222	161	241	
cadmium	7440-43-9	E440	0.020	mg/kg	33.8	35.4	26.9	27.9	35.5	
calcium	7440-70-2	E440	50	mg/kg	180000	150000	164000	166000	181000	
chromium	7440-47-3	E440	0.50	mg/kg	219	165	180	174	225	
cobalt	7440-48-4	E440	0.10	mg/kg	19.9	51.3	18.9	21.2	72.7	
copper	7440-50-8	E440	0.50	mg/kg	2660	2820	2960	13900	1480	
iron	7439-89-6	E440	50	mg/kg	44200	36100	57200	50200	39000	
lead	7439-92-1	E440	0.50	mg/kg	573	530	516	1060	546	
lithium	7439-93-2	E440	2.0	mg/kg	18.8	19.0	15.6	17.0	35.2	
magnesium	7439-95-4	E440	20	mg/kg	10500	10500	9090	11100	10100	
manganese	7439-96-5	E440	1.0	mg/kg	766	561	831	726	1770	
mercury	7439-97-6	E510	0.0500	mg/kg	0.204	0.192	0.168	0.195	0.243	
molybdenum	7439-98-7	E440	0.10	mg/kg	30.1	27.2	35.9	25.8	34.4	
nickel	7440-02-0	E440	0.50	mg/kg	97.9	164	122	115	229	
phosphorus	7723-14-0	E440	50	mg/kg	6350	6040	6890	7480	7710	
potassium	7440-09-7	E440	100	mg/kg	7350	6400	5870	5970	7450	
selenium	7782-49-2	E440	0.20	mg/kg	1.00	0.91	0.78	0.95	0.96	
silver	7440-22-4	E440	0.10	mg/kg	12.3	10.8	20.2	9.67	10.9	
sodium	7440-23-5	E440	50	mg/kg	16400	15600	14200	14000	16600	
strontium	7440-24-6	E440	0.50	mg/kg	502	380	393	387	421	
sulfur	7704-34-9	E440	1000	mg/kg	12100	10800	11200	11700	13600	
thallium	7440-28-0	E440	0.050	mg/kg	0.063	0.056	0.063	0.061	0.067	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2014-A-6	BA2014-A-7	BA2014-A-8	BA2014-A-9	BA2014-A-10
Client sampling date / time					01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-006	VA20A4530-007	VA20A4530-008	VA20A4530-009	VA20A4530-010	
					Result	Result	Result	Result	Result	
Metals										
tin	7440-31-5	E440	2.0	mg/kg	293	236	241	283	272	
titanium	7440-32-6	E440	1.0	mg/kg	282	417	264	1100	808	
tungsten	7440-33-7	E440	0.50	mg/kg	11.6	8.18	10.2	9.09	12.0	
uranium	7440-61-1	E440	0.050	mg/kg	3.69	3.19	3.50	3.40	3.80	
vanadium	7440-62-2	E440	0.20	mg/kg	37.4	36.1	40.1	38.5	40.9	
zinc	7440-66-6	E440	2.0	mg/kg	6770	7260	12800	9370	7700	
zirconium	7440-67-7	E440	1.0	mg/kg	1.4	1.3	1.9	2.0	1.2	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.8	11.8	11.8	11.9	11.9	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	10.7	10.4	10.6	10.5	10.4	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.89	2.89	2.89	2.89	2.89	
pH, TCLP final	----	EPP444	0.010	pH units	8.89	9.06	8.48	8.85	6.62	
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	2.31	2.33	2.14	1.92	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2510	2400	2420	2450	2440	
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	<0.050	<0.050	<0.050	<0.050	<0.050	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.240	0.266	0.262	0.219	0.222	
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	80.8	76.1	77.7	79.0	74.4	
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	<0.25	<0.25	<0.25	<0.25	<0.25	
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/Solid)					Client sample ID	BA2014-A-6	BA2014-A-7	BA2014-A-8	BA2014-A-9	BA2014-A-10
Client sampling date / time					01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00	01-Apr-2020 09:00
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-006	VA20A4530-007	VA20A4530-008	VA20A4530-009	VA20A4530-010	
					Result	Result	Result	Result	Result	
TCLP Metals										
zinc, TCLP	7440-66-6	E444	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2014-A-11	BA2014-A-12	BA2014-A-1 REP	BA2014-A-7 REP	----
Client sampling date / time						01-Apr-2020 09:00	01-Apr-2020 09:00	20-Apr-2020	20-Apr-2020	----
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-011	VA20A4530-012	VA20A4530-013	VA20A4530-014	-----	----
					Result	Result	Result	Result	-----	----
Physical Tests										
moisture	----	E144	0.25	%	22.0	21.6	----	----	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units	11.6	11.8	----	----	----	----
Metals										
aluminum	7429-90-5	E440	50	mg/kg	28200	26300	----	----	----	----
antimony	7440-36-0	E440	0.10	mg/kg	312	312	----	----	----	----
arsenic	7440-38-2	E440	0.10	mg/kg	50.5	45.3	----	----	----	----
barium	7440-39-3	E440	0.50	mg/kg	533	516	----	----	----	----
beryllium	7440-41-7	E440	0.10	mg/kg	0.34	0.35	----	----	----	----
bismuth	7440-69-9	E440	0.20	mg/kg	14.2	15.0	----	----	----	----
boron	7440-42-8	E440	5.0	mg/kg	161	174	----	----	----	----
cadmium	7440-43-9	E440	0.020	mg/kg	31.3	30.7	----	----	----	----
calcium	7440-70-2	E440	50	mg/kg	171000	164000	----	----	----	----
chromium	7440-47-3	E440	0.50	mg/kg	180	202	----	----	----	----
cobalt	7440-48-4	E440	0.10	mg/kg	31.2	18.8	----	----	----	----
copper	7440-50-8	E440	0.50	mg/kg	5370	14200	----	----	----	----
iron	7439-89-6	E440	50	mg/kg	48900	35100	----	----	----	----
lead	7439-92-1	E440	0.50	mg/kg	1700	468	----	----	----	----
lithium	7439-93-2	E440	2.0	mg/kg	17.7	16.6	----	----	----	----
magnesium	7439-95-4	E440	20	mg/kg	9550	11500	----	----	----	----
manganese	7439-96-5	E440	1.0	mg/kg	702	657	----	----	----	----
mercury	7439-97-6	E510	0.0500	mg/kg	0.228	0.220	----	----	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	24.7	34.8	----	----	----	----
nickel	7440-02-0	E440	0.50	mg/kg	110	173	----	----	----	----
phosphorus	7723-14-0	E440	50	mg/kg	7930	6690	----	----	----	----
potassium	7440-09-7	E440	100	mg/kg	7110	6100	----	----	----	----
selenium	7782-49-2	E440	0.20	mg/kg	0.88	0.92	----	----	----	----
silver	7440-22-4	E440	0.10	mg/kg	8.80	9.73	----	----	----	----
sodium	7440-23-5	E440	50	mg/kg	16000	13700	----	----	----	----
strontium	7440-24-6	E440	0.50	mg/kg	386	344	----	----	----	----
sulfur	7704-34-9	E440	1000	mg/kg	11900	11600	----	----	----	----
thallium	7440-28-0	E440	0.050	mg/kg	0.063	0.064	----	----	----	----



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BA2014-A-11	BA2014-A-12	BA2014-A-1 REP	BA2014-A-7 REP	----
Client sampling date / time					01-Apr-2020 09:00	01-Apr-2020 09:00	20-Apr-2020	20-Apr-2020	----	
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-011	VA20A4530-012	VA20A4530-013	VA20A4530-014	-----	
					Result	Result	Result	Result	---	
Metals										
tin	7440-31-5	E440	2.0	mg/kg	301	249	----	----	----	
titanium	7440-32-6	E440	1.0	mg/kg	529	529	----	----	----	
tungsten	7440-33-7	E440	0.50	mg/kg	10.4	12.2	----	----	----	
uranium	7440-61-1	E440	0.050	mg/kg	3.68	3.42	----	----	----	
vanadium	7440-62-2	E440	0.20	mg/kg	39.7	36.4	----	----	----	
zinc	7440-66-6	E440	2.0	mg/kg	6880	7540	----	----	----	
zirconium	7440-67-7	E440	1.0	mg/kg	1.3	1.1	----	----	----	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	11.9	11.9	11.7	11.8	----	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	10.7	10.2	10.6	10.4	----	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	2.89	2.89	2.87	2.87	----	
pH, TCLP final	----	EPP444	0.010	pH units	6.79	9.00	6.98	7.77	----	
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	1.96	2.16	----	----	----	
cadmium, TCLP	7440-43-9	E444	0.050	mg/L	<0.050	<0.050	0.096	0.131	----	
calcium, TCLP	7440-70-2	E444	2.0	mg/L	2410	2520	----	----	----	
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	----	----	----	
cobalt, TCLP	7440-48-4	E444	0.050	mg/L	<0.050	<0.050	----	----	----	
copper, TCLP	7440-50-8	E444	0.050	mg/L	0.221	0.242	----	----	----	
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	76.5	81.7	----	----	----	
mercury, TCLP	7439-97-6	E512	0.0100	mg/L	<0.0100	<0.0100	----	----	----	
nickel, TCLP	7440-02-0	E444	0.25	mg/L	<0.25	<0.25	----	----	----	
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/Solid)					Client sample ID	BA2014-A-11	BA2014-A-12	BA2014-A-1 REP	BA2014-A-7 REP	----
Client sampling date / time					01-Apr-2020 09:00	01-Apr-2020 09:00	20-Apr-2020	20-Apr-2020	----	
Analyte	CAS Number	Method	LOR	Unit	VA20A4530-011	VA20A4530-012	VA20A4530-013	VA20A4530-014	-----	
TCLP Metals					Result	Result	Result	Result	----	
zinc, TCLP	7440-66-6	E444	0.50	mg/L	<0.50	<0.50	----	----	----	

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