

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-158137-1

Client Project/Site: CUF\_BS\_20180827\_1A

Revision: 1

For:

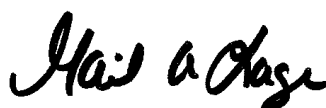
Environmental Standards Inc.

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2/8/2019 8:35:37 AM

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Results relate only to the items tested and the sample(s) as received by the laboratory.



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## Sample Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-158137-1	CUF-BS-FB05-20180827	Water	08/27/18 12:31	08/27/18 19:00
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Solid	08/27/18 13:12	08/27/18 19:00
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Solid	08/27/18 13:59	08/27/18 19:00
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Solid	08/27/18 14:19	08/27/18 19:00
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Solid	08/27/18 14:45	08/27/18 19:00
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Solid	08/27/18 15:05	08/27/18 19:00
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Solid	08/27/18 15:25	08/27/18 19:00
490-158137-8	CUF-BS-EB02-20180827	Water	08/27/18 15:55	08/27/18 19:00

# Case Narrative

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Job ID: 490-158137-1**

**Laboratory: TestAmerica Nashville**

## Narrative

### Job Narrative 490-158137-1

#### Revised Report

This report was revised to include the ICPMS data from TestAmerica Pittsburgh. This replaces the previous final report.

#### Receipt

The samples were received on 8/27/2018 7:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.7° C, 2.5° C and 3.3° C.

#### HPLC/IC

Method(s) 9056A: The method blank for analytical batch 490-539643 contained Chloride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 264947 were outside control limits for several analytes. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

#### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Definitions/Glossary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

### Qualifiers

#### HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-FB05-20180827**

**Lab Sample ID: 490-158137-1**

**Date Collected: 08/27/18 12:31**

**Matrix: Water**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.253	J B	1.00	0.200	mg/L			08/29/18 16:51	1
Fluoride	ND		0.100	0.0100	mg/L			08/29/18 16:51	1
Sulfate	0.436	J B	1.00	0.0300	mg/L			08/29/18 16:51	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		08/29/18 14:15	08/31/18 21:03	1

## Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.00112	mg/L		12/07/18 13:06	12/08/18 11:12	1
Arsenic	ND		0.00100	0.000323	mg/L		12/07/18 13:06	12/08/18 11:12	1
Barium	ND		0.0100	0.000373	mg/L		12/07/18 13:06	12/08/18 11:12	1
Beryllium	ND		0.00100	0.0000570	mg/L		12/07/18 13:06	12/08/18 11:12	1
Boron	ND		0.0800	0.0303	mg/L		12/07/18 13:06	12/08/18 11:12	1
Cadmium	ND		0.00100	0.000125	mg/L		12/07/18 13:06	12/08/18 11:12	1
Calcium	0.124	J	0.500	0.116	mg/L		12/07/18 13:06	12/08/18 11:12	1
Chromium	0.00157	J	0.00200	0.000631	mg/L		12/07/18 13:06	12/08/18 11:12	1
Cobalt	ND		0.000500	0.0000750	mg/L		12/07/18 13:06	12/08/18 11:12	1
Copper	ND		0.00200	0.00130	mg/L		12/07/18 13:06	12/08/18 11:12	1
Lead	ND		0.00100	0.0000940	mg/L		12/07/18 13:06	12/08/18 11:12	1
Lithium	ND		0.00500	0.00256	mg/L		12/07/18 13:06	12/08/18 11:12	1
Molybdenum	ND		0.00500	0.000474	mg/L		12/07/18 13:06	12/08/18 11:12	1
Nickel	ND		0.00100	0.000312	mg/L		12/07/18 13:06	12/08/18 11:12	1
Selenium	ND		0.00500	0.000813	mg/L		12/07/18 13:06	12/08/18 11:12	1
Silver	ND		0.00100	0.000121	mg/L		12/07/18 13:06	12/08/18 11:12	1
Thallium	ND		0.00100	0.0000630	mg/L		12/07/18 13:06	12/08/18 11:12	1
Vanadium	ND		0.00100	0.000899	mg/L		12/07/18 13:06	12/08/18 11:12	1
Zinc	ND		0.00500	0.00242	mg/L		12/07/18 13:06	12/08/18 11:12	1

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# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-BG01-0.0/0.5-20180827**

**Lab Sample ID: 490-158137-2**

**Date Collected: 08/27/18 13:12**

**Matrix: Solid**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.3	8.60	mg/Kg	☼		09/04/18 14:15	1
Fluoride	1.65		1.23	0.982	mg/Kg	☼		09/04/18 14:15	1
Sulfate	12.6		12.3	7.37	mg/Kg	☼		09/04/18 14:15	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0634	J	0.121	0.0363	mg/Kg	☼	09/07/18 15:33	09/08/18 15:08	1

## Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.816		0.248	0.0767	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Arsenic	16.3		0.124	0.0322	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Barium	85.4		1.24	0.0706	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Beryllium	0.708		0.124	0.00928	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Boron	1.72	J	9.90	0.944	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Cadmium	0.218		0.124	0.0210	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Calcium	1880		61.9	11.1	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Chromium	31.1		0.248	0.0817	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Cobalt	10.8		0.0619	0.0103	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Copper	17.3		0.248	0.140	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Lead	15.5		0.124	0.0433	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Lithium	2.89		0.619	0.342	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Molybdenum	10.2		0.619	0.0767	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Nickel	14.0	B	0.124	0.0755	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Selenium	0.449	J	0.619	0.0743	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Silver	0.139		0.124	0.0173	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Thallium	0.258		0.124	0.0161	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Vanadium	40.7		0.124	0.0755	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1
Zinc	43.8	B	0.619	0.413	mg/Kg	☼	12/07/18 15:19	12/08/18 22:32	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.2		0.1	0.1	%			08/28/18 13:18	1
Percent Solids	80.8		0.1	0.1	%			08/28/18 13:18	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.2		0.1	0.1	SU			08/28/18 19:15	1

TestAmerica Nashville

# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-BG01-1.0/3.0-20180827**

**Lab Sample ID: 490-158137-3**

**Date Collected: 08/27/18 13:59**

**Matrix: Solid**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.7	8.18	mg/Kg	☼		09/04/18 14:27	1
Fluoride	ND		1.17	0.935	mg/Kg	☼		09/04/18 14:27	1
<b>Sulfate</b>	<b>18.8</b>		11.7	7.01	mg/Kg	☼		09/04/18 14:27	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.0927</b>	<b>J</b>	0.113	0.0340	mg/Kg	☼	09/07/18 15:33	09/08/18 15:21	1

## Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Antimony</b>	<b>1.86</b>		0.229	0.0711	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Arsenic</b>	<b>58.6</b>		0.115	0.0298	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Barium</b>	<b>37.9</b>		1.15	0.0654	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Beryllium</b>	<b>0.703</b>		0.115	0.00860	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Boron</b>	<b>4.32</b>	<b>J</b>	9.17	0.875	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Cadmium</b>	<b>0.141</b>		0.115	0.0195	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Calcium</b>	<b>1030</b>		57.3	10.3	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Chromium</b>	<b>30.6</b>		0.229	0.0757	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Cobalt</b>	<b>2.10</b>		0.0573	0.00952	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Copper</b>	<b>54.1</b>		0.229	0.130	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Lead</b>	<b>13.0</b>		0.115	0.0401	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Lithium</b>	<b>3.63</b>		0.573	0.316	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Molybdenum</b>	<b>66.1</b>		0.573	0.0711	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Nickel</b>	<b>12.0</b>	<b>B</b>	0.115	0.0699	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Selenium</b>	<b>1.02</b>		0.573	0.0688	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Silver</b>	<b>0.0531</b>	<b>J</b>	0.115	0.0161	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Thallium</b>	<b>0.577</b>		0.115	0.0149	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Vanadium</b>	<b>60.6</b>		0.115	0.0699	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1
<b>Zinc</b>	<b>24.7</b>	<b>B</b>	0.573	0.383	mg/Kg	☼	12/07/18 15:19	12/08/18 22:37	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>15.3</b>		0.1	0.1	%			08/28/18 13:18	1
<b>Percent Solids</b>	<b>84.7</b>		0.1	0.1	%			08/28/18 13:18	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>6.0</b>		0.1	0.1	SU			08/28/18 19:15	1

TestAmerica Nashville



# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-BG01-6.5/8.5-20180827**

**Lab Sample ID: 490-158137-4**

**Date Collected: 08/27/18 14:19**

**Matrix: Solid**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.2	8.56	mg/Kg	☼		09/04/18 14:39	1
Fluoride	ND		1.22	0.979	mg/Kg	☼		09/04/18 14:39	1
Sulfate	9.39	J	12.2	7.34	mg/Kg	☼		09/04/18 14:39	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.213		0.118	0.0353	mg/Kg	☼	09/07/18 15:33	09/08/18 15:24	1

## Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	6.19		0.232	0.0721	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Arsenic	77.2		0.116	0.0302	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Barium	36.0		1.16	0.0663	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Beryllium	0.560		0.116	0.00872	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Boron	6.24	J	9.30	0.887	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Cadmium	0.204		0.116	0.0198	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Calcium	312		58.1	10.4	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Chromium	15.4		0.232	0.0767	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Cobalt	0.548		0.0581	0.00965	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Copper	117		0.232	0.131	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Lead	43.3		0.116	0.0407	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Lithium	1.98		0.581	0.321	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Molybdenum	172		0.581	0.0721	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Nickel	3.07	B	0.116	0.0709	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Selenium	1.27		0.581	0.0697	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Silver	0.0694	J	0.116	0.0163	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Thallium	0.468		0.116	0.0151	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Vanadium	80.2		0.116	0.0709	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1
Zinc	11.1	B	0.581	0.388	mg/Kg	☼	12/07/18 15:19	12/08/18 22:41	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.1		0.1	0.1	%			08/28/18 13:18	1
Percent Solids	81.9		0.1	0.1	%			08/28/18 13:18	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.1		0.1	0.1	SU			08/28/18 19:15	1

TestAmerica Nashville

# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-BG01-11.5/13.5-20180827**

**Lab Sample ID: 490-158137-5**

**Date Collected: 08/27/18 14:45**

**Matrix: Solid**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.7	8.89	mg/Kg	☼		09/04/18 14:50	1
Fluoride	ND		1.27	1.02	mg/Kg	☼		09/04/18 14:50	1
Sulfate	9.26	J	12.7	7.62	mg/Kg	☼		09/04/18 14:50	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0764	J	0.127	0.0381	mg/Kg	☼	09/07/18 15:33	09/08/18 15:27	1

## Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.36		0.252	0.0782	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Arsenic	12.5		0.126	0.0328	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Barium	42.7		1.26	0.0719	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Beryllium	0.462		0.126	0.00946	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Boron	7.16	J	10.1	0.962	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Cadmium	0.171		0.126	0.0214	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Calcium	265		63.0	11.3	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Chromium	11.7		0.252	0.0832	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Cobalt	0.621		0.0630	0.0105	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Copper	92.0		0.252	0.142	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Lead	11.2		0.126	0.0441	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Lithium	2.07		0.630	0.348	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Molybdenum	17.9		0.630	0.0782	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Nickel	4.50	B	0.126	0.0769	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Selenium	0.492	J	0.630	0.0757	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Silver	0.0714	J	0.126	0.0177	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Thallium	0.748		0.126	0.0164	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Vanadium	35.6		0.126	0.0769	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1
Zinc	9.66	B	0.630	0.421	mg/Kg	☼	12/07/18 15:19	12/08/18 22:46	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.7		0.1	0.1	%			08/28/18 13:18	1
Percent Solids	79.3		0.1	0.1	%			08/28/18 13:18	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.0		0.1	0.1	SU			08/28/18 19:15	1

TestAmerica Nashville

# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-BG01-16.5/18.5-20180827**

**Lab Sample ID: 490-158137-6**

**Date Collected: 08/27/18 15:05**

**Matrix: Solid**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.8	8.93	mg/Kg	☼		09/04/18 15:02	1
Fluoride	ND		1.28	1.02	mg/Kg	☼		09/04/18 15:02	1
Sulfate	7.77	J	12.8	7.65	mg/Kg	☼		09/04/18 15:02	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0989	J	0.125	0.0374	mg/Kg	☼	09/07/18 15:33	09/08/18 15:35	1

## Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.53		0.266	0.0826	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Arsenic	39.9		0.133	0.0346	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Barium	271		1.33	0.0759	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Beryllium	1.15		0.133	0.00999	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Boron	3.90	J	10.7	1.02	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Cadmium	0.217		0.133	0.0226	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Calcium	415		66.6	11.9	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Chromium	17.0		0.266	0.0879	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Cobalt	1.84		0.0666	0.0111	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Copper	189		0.266	0.150	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Lead	41.5		0.133	0.0466	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Lithium	3.03		0.666	0.368	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Molybdenum	54.0		0.666	0.0826	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Nickel	12.0	B	0.133	0.0812	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Selenium	1.31		0.666	0.0799	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Silver	0.148		0.133	0.0186	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Thallium	1.38		0.133	0.0173	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Vanadium	119		0.133	0.0812	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1
Zinc	23.8	B	0.666	0.445	mg/Kg	☼	12/07/18 15:19	12/08/18 23:04	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.8		0.1	0.1	%			08/28/18 13:18	1
Percent Solids	78.2		0.1	0.1	%			08/28/18 13:18	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.2		0.1	0.1	SU			08/28/18 19:15	1

TestAmerica Nashville

# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-BG01-21.5/23.5-20180827**

**Lab Sample ID: 490-158137-7**

**Date Collected: 08/27/18 15:25**

**Matrix: Solid**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		13.3	9.31	mg/Kg	☼		09/04/18 15:13	1
Fluoride	ND		1.33	1.06	mg/Kg	☼		09/04/18 15:13	1
<b>Sulfate</b>	<b>107</b>		13.3	7.98	mg/Kg	☼		09/04/18 15:13	1

## Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.163</b>		0.129	0.0388	mg/Kg	☼	09/07/18 15:33	09/08/18 15:38	1

## Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Antimony</b>	<b>1.52</b>	<b>F1</b>	0.272	0.0844	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Arsenic</b>	<b>22.3</b>	<b>F2</b>	0.136	0.0354	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Barium</b>	<b>40.2</b>		1.36	0.0776	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Beryllium</b>	<b>0.851</b>		0.136	0.0102	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Boron</b>	<b>5.75</b>	<b>J</b>	10.9	1.04	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Cadmium</b>	<b>0.345</b>		0.136	0.0231	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Calcium</b>	<b>395</b>		68.1	12.2	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Chromium</b>	<b>12.7</b>		0.272	0.0898	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Cobalt</b>	<b>6.06</b>		0.0681	0.0113	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Copper</b>	<b>139</b>		0.272	0.154	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Lead</b>	<b>18.9</b>		0.136	0.0476	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Lithium</b>	<b>2.89</b>	<b>F1</b>	0.681	0.376	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Molybdenum</b>	<b>28.4</b>		0.681	0.0844	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Nickel</b>	<b>33.3</b>	<b>B</b>	0.136	0.0830	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Selenium</b>	<b>0.842</b>	<b>F1</b>	0.681	0.0817	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Silver</b>	<b>0.0852</b>	<b>J</b>	0.136	0.0191	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Thallium</b>	<b>1.98</b>		0.136	0.0177	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Vanadium</b>	<b>60.8</b>	<b>F1</b>	0.136	0.0830	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1
<b>Zinc</b>	<b>45.4</b>	<b>B</b>	0.681	0.455	mg/Kg	☼	12/07/18 15:19	12/08/18 23:08	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>24.3</b>		0.1	0.1	%			08/28/18 13:18	1
<b>Percent Solids</b>	<b>75.7</b>		0.1	0.1	%			08/28/18 13:18	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH</b>	<b>4.6</b>		0.1	0.1	SU			08/28/18 19:15	1

TestAmerica Nashville

# Client Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-EB02-20180827**

**Lab Sample ID: 490-158137-8**

**Date Collected: 08/27/18 15:55**

**Matrix: Water**

**Date Received: 08/27/18 19:00**

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.303	J B	1.00	0.200	mg/L			08/29/18 17:26	1
Fluoride	ND		0.100	0.0100	mg/L			08/29/18 17:26	1
Sulfate	0.436	J B	1.00	0.0300	mg/L			08/29/18 17:26	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		08/29/18 14:15	08/31/18 21:21	1

## Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.00112	mg/L		12/07/18 13:06	12/08/18 11:16	1
Arsenic	ND		0.00100	0.000323	mg/L		12/07/18 13:06	12/08/18 11:16	1
Barium	ND		0.0100	0.000373	mg/L		12/07/18 13:06	12/08/18 11:16	1
Beryllium	ND		0.00100	0.0000570	mg/L		12/07/18 13:06	12/08/18 11:16	1
Boron	ND		0.0800	0.0303	mg/L		12/07/18 13:06	12/08/18 11:16	1
Cadmium	ND		0.00100	0.000125	mg/L		12/07/18 13:06	12/08/18 11:16	1
Calcium	0.130	J	0.500	0.116	mg/L		12/07/18 13:06	12/08/18 11:16	1
Chromium	0.00164	J	0.00200	0.000631	mg/L		12/07/18 13:06	12/08/18 11:16	1
Cobalt	ND		0.000500	0.0000750	mg/L		12/07/18 13:06	12/08/18 11:16	1
Copper	ND		0.00200	0.00130	mg/L		12/07/18 13:06	12/08/18 11:16	1
Lead	ND		0.00100	0.0000940	mg/L		12/07/18 13:06	12/08/18 11:16	1
Lithium	ND		0.00500	0.00256	mg/L		12/07/18 13:06	12/08/18 11:16	1
Molybdenum	ND		0.00500	0.000474	mg/L		12/07/18 13:06	12/08/18 11:16	1
Nickel	ND		0.00100	0.000312	mg/L		12/07/18 13:06	12/08/18 11:16	1
Selenium	ND		0.00500	0.000813	mg/L		12/07/18 13:06	12/08/18 11:16	1
Silver	ND		0.00100	0.000121	mg/L		12/07/18 13:06	12/08/18 11:16	1
Thallium	ND		0.00100	0.0000630	mg/L		12/07/18 13:06	12/08/18 11:16	1
Vanadium	0.000981	J	0.00100	0.000899	mg/L		12/07/18 13:06	12/08/18 11:16	1
Zinc	ND		0.00500	0.00242	mg/L		12/07/18 13:06	12/08/18 11:16	1

TestAmerica Nashville

# QC Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-539643/3

Matrix: Water

Analysis Batch: 539643

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3023	J	1.00	0.200	mg/L			08/29/18 16:17	1
Fluoride	ND		0.100	0.0100	mg/L			08/29/18 16:17	1
Sulfate	0.4435	J	1.00	0.0300	mg/L			08/29/18 16:17	1

Lab Sample ID: LCS 490-539643/4

Matrix: Water

Analysis Batch: 539643

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.02		mg/L		100	80 - 120
Fluoride	1.00	0.9281		mg/L		93	80 - 120
Sulfate	10.0	9.545		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-539643/5

Matrix: Water

Analysis Batch: 539643

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.940		mg/L		99	80 - 120	1	20
Fluoride	1.00	0.9472		mg/L		95	80 - 120	2	20
Sulfate	10.0	9.748		mg/L		97	80 - 120	2	20

Lab Sample ID: 490-158137-1 MS

Matrix: Water

Analysis Batch: 539643

Client Sample ID: CUF-BS-FB05-20180827

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	0.253	J B	10.0	10.13		mg/L		99	80 - 120
Fluoride	ND		1.00	0.9375		mg/L		94	80 - 120
Sulfate	0.436	J B	10.0	9.540		mg/L		91	80 - 120

Lab Sample ID: 490-158137-1 MSD

Matrix: Water

Analysis Batch: 539643

Client Sample ID: CUF-BS-FB05-20180827

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	0.253	J B	10.0	11.29		mg/L		110	80 - 120	11	20
Fluoride	ND		1.00	1.071		mg/L		107	80 - 120	13	20
Sulfate	0.436	J B	10.0	10.97		mg/L		105	80 - 120	14	20

Lab Sample ID: MRL 490-540592/1

Matrix: Solid

Analysis Batch: 540592

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1.00	0.9886	J	mg/L		99	
Fluoride	0.100	0.1130		mg/L		113	
Sulfate	1.00	1.218		mg/L		122	

TestAmerica Nashville

# QC Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MRL 490-540592/33

Matrix: Solid

Analysis Batch: 540592

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1.00	0.9937	J	mg/L		99	
Fluoride	0.100	0.1130		mg/L		113	
Sulfate	1.00	1.162		mg/L		116	

Lab Sample ID: MB 490-540377/1-A

Matrix: Solid

Analysis Batch: 540592

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		9.92	6.95	mg/Kg			09/04/18 10:12	1
Fluoride	ND		0.992	0.794	mg/Kg			09/04/18 10:12	1
Sulfate	ND		9.92	5.95	mg/Kg			09/04/18 10:12	1

Lab Sample ID: LCS 490-540377/2-A

Matrix: Solid

Analysis Batch: 540592

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	99.6	97.62		mg/Kg		98	80 - 120
Fluoride	9.96	9.789		mg/Kg		98	80 - 120
Sulfate	99.7	98.28		mg/Kg		99	80 - 120

Lab Sample ID: LCSD 490-540377/3-A

Matrix: Solid

Analysis Batch: 540592

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	99.8	97.51		mg/Kg		98	80 - 120	0	20
Fluoride	9.98	9.919		mg/Kg		99	80 - 120	1	20
Sulfate	99.9	95.61		mg/Kg		96	80 - 120	3	20

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-539512/1-A

Matrix: Water

Analysis Batch: 540387

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 539512

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		08/29/18 14:15	08/31/18 20:58	1

Lab Sample ID: LCS 490-539512/2-A

Matrix: Water

Analysis Batch: 540387

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 539512

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.001070		mg/L		107	80 - 120

TestAmerica Nashville

# QC Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 490-158137-1 MS

Matrix: Water

Analysis Batch: 540387

Client Sample ID: CUF-BS-FB05-20180827

Prep Type: Total/NA

Prep Batch: 539512

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec.
Mercury	ND		0.00100	0.001046		mg/L		105	75 - 125	

Lab Sample ID: 490-158137-1 MSD

Matrix: Water

Analysis Batch: 540387

Client Sample ID: CUF-BS-FB05-20180827

Prep Type: Total/NA

Prep Batch: 539512

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		0.00100	0.001053		mg/L		105	75 - 125	1	20

## Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 490-541313/1-A

Matrix: Solid

Analysis Batch: 541520

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 541313

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0992	0.0298	mg/Kg		09/07/18 15:33	09/08/18 15:02	1

Lab Sample ID: LCS 490-541313/2-A

Matrix: Solid

Analysis Batch: 541520

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 541313

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	%Rec.
Mercury	0.166	0.1566		mg/Kg		94	80 - 120	

Lab Sample ID: 490-158137-2 MS

Matrix: Solid

Analysis Batch: 541520

Client Sample ID: CUF-BS-BG01-0.0/0.5-20180827

Prep Type: Total/NA

Prep Batch: 541313

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec.
Mercury	0.0634	J	0.199	0.2577		mg/Kg	✱	98	80 - 120	

Lab Sample ID: 490-158137-2 MSD

Matrix: Solid

Analysis Batch: 541520

Client Sample ID: CUF-BS-BG01-0.0/0.5-20180827

Prep Type: Total/NA

Prep Batch: 541313

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.0634	J	0.202	0.2624		mg/Kg	✱	99	80 - 120	2	20

## Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-264947/1-A

Matrix: Solid

Analysis Batch: 265026

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 264947

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.200	0.0620	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Arsenic	ND		0.100	0.0260	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Barium	ND		1.00	0.0570	mg/Kg		12/07/18 15:19	12/08/18 21:23	1

TestAmerica Nashville



# QC Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-264947/1-A

Matrix: Solid

Analysis Batch: 265026

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 264947

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.100	0.00750	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Boron	ND		8.00	0.763	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Cadmium	ND		0.100	0.0170	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Calcium	ND		50.0	8.95	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Chromium	ND		0.200	0.0660	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Cobalt	ND		0.0500	0.00830	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Copper	ND		0.200	0.113	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Lead	ND		0.100	0.0350	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Lithium	ND		0.500	0.276	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Molybdenum	ND		0.500	0.0620	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Nickel	0.06910	J	0.100	0.0610	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Selenium	ND		0.500	0.0600	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Silver	ND		0.100	0.0140	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Thallium	ND		0.100	0.0130	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Vanadium	ND		0.100	0.0610	mg/Kg		12/07/18 15:19	12/08/18 21:23	1
Zinc	0.3496	J	0.500	0.334	mg/Kg		12/07/18 15:19	12/08/18 21:23	1

Lab Sample ID: LCS 180-264947/2-A

Matrix: Solid

Analysis Batch: 265026

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 264947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	50.0	49.55		mg/Kg		99	80 - 120
Arsenic	4.00	3.743		mg/Kg		94	80 - 120
Barium	200	180.5		mg/Kg		90	80 - 120
Beryllium	5.00	4.624		mg/Kg		92	80 - 120
Boron	100	93.78		mg/Kg		94	80 - 120
Cadmium	5.00	5.049		mg/Kg		101	80 - 120
Calcium	5000	4849		mg/Kg		97	80 - 120
Chromium	20.0	20.42		mg/Kg		102	80 - 120
Cobalt	50.0	49.79		mg/Kg		100	80 - 120
Copper	25.0	24.87		mg/Kg		99	80 - 120
Lead	2.00	2.034		mg/Kg		102	80 - 120
Lithium	5.00	4.749		mg/Kg		95	80 - 120
Molybdenum	100	102.1		mg/Kg		102	80 - 120
Nickel	50.0	50.69		mg/Kg		101	80 - 120
Selenium	1.00	0.9759		mg/Kg		98	80 - 120
Silver	5.00	5.098		mg/Kg		102	80 - 120
Thallium	5.00	5.000		mg/Kg		100	80 - 120
Vanadium	50.0	47.73		mg/Kg		95	80 - 120
Zinc	50.0	48.92		mg/Kg		98	80 - 120

Lab Sample ID: 490-158137-7 MS

Matrix: Solid

Analysis Batch: 265026

Client Sample ID: CUF-BS-BG01-21.5/23.5-20180827

Prep Type: Total/NA

Prep Batch: 264947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.52	F1	62.9	43.17	F1	mg/Kg	☼	66	75 - 125
Arsenic	22.3	F2	5.03	16.28	4	mg/Kg	☼	-120	75 - 125

TestAmerica Nashville

# QC Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-158137-7 MS

Matrix: Solid

Analysis Batch: 265026

Client Sample ID: CUF-BS-BG01-21.5/23.5-20180827

Prep Type: Total/NA

Prep Batch: 264947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	40.2		251	243.9		mg/Kg	✱	81	75 - 125
Beryllium	0.851		6.29	6.149		mg/Kg	✱	84	75 - 125
Boron	5.75	J	126	115.8		mg/Kg	✱	88	75 - 125
Cadmium	0.345		6.29	6.076		mg/Kg	✱	91	75 - 125
Calcium	395		6290	5565		mg/Kg	✱	82	75 - 125
Chromium	12.7		25.1	40.20		mg/Kg	✱	109	75 - 125
Cobalt	6.06		62.9	63.93		mg/Kg	✱	92	75 - 125
Copper	139		31.4	122.2	4	mg/Kg	✱	-54	75 - 125
Lead	18.9		2.51	18.75	4	mg/Kg	✱	-8	75 - 125
Lithium	2.89	F1	6.29	10.60		mg/Kg	✱	123	75 - 125
Molybdenum	28.4		126	131.6		mg/Kg	✱	82	75 - 125
Nickel	33.3	B	62.9	91.55		mg/Kg	✱	93	75 - 125
Selenium	0.842	F1	1.26	1.445	F1	mg/Kg	✱	48	75 - 125
Silver	0.0852	J	6.29	5.970		mg/Kg	✱	94	75 - 125
Thallium	1.98		6.29	7.251		mg/Kg	✱	84	75 - 125
Vanadium	60.8	F1	62.9	96.62	F1	mg/Kg	✱	57	75 - 125
Zinc	45.4	B	62.9	99.21		mg/Kg	✱	86	75 - 125

Lab Sample ID: 490-158137-7 MSD

Matrix: Solid

Analysis Batch: 265026

Client Sample ID: CUF-BS-BG01-21.5/23.5-20180827

Prep Type: Total/NA

Prep Batch: 264947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Antimony	1.52	F1	63.5	41.94	F1	mg/Kg	✱	64	75 - 125	3	20
Arsenic	22.3	F2	5.08	20.40	4	mg/Kg	✱	-37	75 - 125	22	20
Barium	40.2		254	253.4		mg/Kg	✱	84	75 - 125	4	20
Beryllium	0.851		6.35	6.137		mg/Kg	✱	83	75 - 125	0	20
Boron	5.75	J	127	103.8		mg/Kg	✱	77	75 - 125	11	20
Cadmium	0.345		6.35	6.187		mg/Kg	✱	92	75 - 125	2	20
Calcium	395		6350	5371		mg/Kg	✱	78	75 - 125	4	20
Chromium	12.7		25.4	40.64		mg/Kg	✱	110	75 - 125	1	20
Cobalt	6.06		63.5	64.22		mg/Kg	✱	92	75 - 125	0	20
Copper	139		31.7	134.3	4	mg/Kg	✱	-15	75 - 125	9	20
Lead	18.9		2.54	21.56	4	mg/Kg	✱	103	75 - 125	14	20
Lithium	2.89	F1	6.35	11.45	F1	mg/Kg	✱	135	75 - 125	8	20
Molybdenum	28.4		127	139.4		mg/Kg	✱	87	75 - 125	6	20
Nickel	33.3	B	63.5	92.72		mg/Kg	✱	94	75 - 125	1	20
Selenium	0.842	F1	1.27	1.602	F1	mg/Kg	✱	60	75 - 125	10	20
Silver	0.0852	J	6.35	5.889		mg/Kg	✱	91	75 - 125	1	20
Thallium	1.98		6.35	7.274		mg/Kg	✱	83	75 - 125	0	20
Vanadium	60.8	F1	63.5	111.0		mg/Kg	✱	79	75 - 125	14	20
Zinc	45.4	B	63.5	100.6		mg/Kg	✱	87	75 - 125	1	20

Lab Sample ID: MB 180-264922/1-A

Matrix: Water

Analysis Batch: 265014

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 264922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.00112	mg/L		12/07/18 13:06	12/08/18 09:48	1

TestAmerica Nashville

# QC Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-264922/1-A

Matrix: Water

Analysis Batch: 265014

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 264922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00100	0.000323	mg/L		12/07/18 13:06	12/08/18 09:48	1
Barium	ND		0.0100	0.000373	mg/L		12/07/18 13:06	12/08/18 09:48	1
Beryllium	ND		0.00100	0.0000570	mg/L		12/07/18 13:06	12/08/18 09:48	1
Boron	ND		0.0800	0.0303	mg/L		12/07/18 13:06	12/08/18 09:48	1
Cadmium	ND		0.00100	0.000125	mg/L		12/07/18 13:06	12/08/18 09:48	1
Calcium	ND		0.500	0.116	mg/L		12/07/18 13:06	12/08/18 09:48	1
Chromium	ND		0.00200	0.000631	mg/L		12/07/18 13:06	12/08/18 09:48	1
Cobalt	ND		0.000500	0.0000750	mg/L		12/07/18 13:06	12/08/18 09:48	1
Copper	ND		0.00200	0.00130	mg/L		12/07/18 13:06	12/08/18 09:48	1
Lead	ND		0.00100	0.0000940	mg/L		12/07/18 13:06	12/08/18 09:48	1
Lithium	ND		0.00500	0.00256	mg/L		12/07/18 13:06	12/08/18 09:48	1
Molybdenum	ND		0.00500	0.000474	mg/L		12/07/18 13:06	12/08/18 09:48	1
Nickel	ND		0.00100	0.000312	mg/L		12/07/18 13:06	12/08/18 09:48	1
Selenium	ND		0.00500	0.000813	mg/L		12/07/18 13:06	12/08/18 09:48	1
Silver	ND		0.00100	0.000121	mg/L		12/07/18 13:06	12/08/18 09:48	1
Thallium	ND		0.00100	0.0000630	mg/L		12/07/18 13:06	12/08/18 09:48	1
Vanadium	ND		0.00100	0.000899	mg/L		12/07/18 13:06	12/08/18 09:48	1
Zinc	ND		0.00500	0.00242	mg/L		12/07/18 13:06	12/08/18 09:48	1

Lab Sample ID: LCS 180-264922/2-A

Matrix: Water

Analysis Batch: 265014

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 264922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5171		mg/L		103	80 - 120
Arsenic	0.0400	0.03826		mg/L		96	80 - 120
Barium	2.00	2.079		mg/L		104	80 - 120
Beryllium	0.0500	0.05001		mg/L		100	80 - 120
Boron	1.00	0.9654		mg/L		97	80 - 120
Cadmium	0.0500	0.05171		mg/L		103	80 - 120
Calcium	50.0	51.82		mg/L		104	80 - 120
Chromium	0.200	0.2054		mg/L		103	80 - 120
Cobalt	0.500	0.4567		mg/L		91	80 - 120
Copper	0.250	0.2400		mg/L		96	80 - 120
Lead	0.0200	0.01987		mg/L		99	80 - 120
Lithium	0.0500	0.04765		mg/L		95	80 - 120
Molybdenum	1.00	1.022		mg/L		102	80 - 120
Nickel	0.500	0.4666		mg/L		93	80 - 120
Selenium	0.0100	0.009088		mg/L		91	80 - 120
Silver	0.0500	0.04978		mg/L		100	80 - 120
Thallium	0.0500	0.04937		mg/L		99	80 - 120
Vanadium	0.500	0.4620		mg/L		92	80 - 120
Zinc	0.500	0.4742		mg/L		95	80 - 120

TestAmerica Nashville

# QC Sample Results

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 180-264922/3-A

Matrix: Water

Analysis Batch: 265014

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 264922

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.500	0.5143		mg/L		103	80 - 120	1	20
Arsenic	0.0400	0.03919		mg/L		98	80 - 120	2	20
Barium	2.00	2.074		mg/L		104	80 - 120	0	20
Beryllium	0.0500	0.04831		mg/L		97	80 - 120	3	20
Boron	1.00	0.9375		mg/L		94	80 - 120	3	20
Cadmium	0.0500	0.05094		mg/L		102	80 - 120	2	20
Calcium	50.0	52.06		mg/L		104	80 - 120	0	20
Chromium	0.200	0.2019		mg/L		101	80 - 120	2	20
Cobalt	0.500	0.4676		mg/L		94	80 - 120	2	20
Copper	0.250	0.2404		mg/L		96	80 - 120	0	20
Lead	0.0200	0.02003		mg/L		100	80 - 120	1	20
Lithium	0.0500	0.04735		mg/L		95	80 - 120	1	20
Molybdenum	1.00	1.028		mg/L		103	80 - 120	1	20
Nickel	0.500	0.4750		mg/L		95	80 - 120	2	20
Selenium	0.0100	0.009722		mg/L		97	80 - 120	7	20
Silver	0.0500	0.05046		mg/L		101	80 - 120	1	20
Thallium	0.0500	0.04955		mg/L		99	80 - 120	0	20
Vanadium	0.500	0.4685		mg/L		94	80 - 120	1	20
Zinc	0.500	0.4846		mg/L		97	80 - 120	2	20

## Method: 9045D - pH

Lab Sample ID: LCS 490-539285/1

Matrix: Solid

Analysis Batch: 539285

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.0		SU		100	98 - 103		

Lab Sample ID: 490-158137-2 DU

Matrix: Solid

Analysis Batch: 539285

Client Sample ID: CUF-BS-BG01-0.0/0.5-20180827

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.2		6.2		SU		0	20

## Method: Moisture - Percent Moisture

Lab Sample ID: 490-158137-2 DU

Matrix: Solid

Analysis Batch: 539184

Client Sample ID: CUF-BS-BG01-0.0/0.5-20180827

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	19.2		23.1		%		18	20
Percent Solids	80.8		76.9		%		5	20

TestAmerica Nashville

# QC Association Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## HPLC/IC

### Analysis Batch: 539643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-1	CUF-BS-FB05-20180827	Total/NA	Water	9056A	
490-158137-8	CUF-BS-EB02-20180827	Total/NA	Water	9056A	
MB 490-539643/3	Method Blank	Total/NA	Water	9056A	
LCS 490-539643/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-539643/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-158137-1 MS	CUF-BS-FB05-20180827	Total/NA	Water	9056A	
490-158137-1 MSD	CUF-BS-FB05-20180827	Total/NA	Water	9056A	

### Leach Batch: 540377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Soluble	Solid	DI Leach	
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Soluble	Solid	DI Leach	
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Soluble	Solid	DI Leach	
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Soluble	Solid	DI Leach	
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Soluble	Solid	DI Leach	
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Soluble	Solid	DI Leach	
MB 490-540377/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 490-540377/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 490-540377/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

### Analysis Batch: 540592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Soluble	Solid	9056A	540377
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Soluble	Solid	9056A	540377
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Soluble	Solid	9056A	540377
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Soluble	Solid	9056A	540377
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Soluble	Solid	9056A	540377
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Soluble	Solid	9056A	540377
MB 490-540377/1-A	Method Blank	Soluble	Solid	9056A	540377
LCS 490-540377/2-A	Lab Control Sample	Soluble	Solid	9056A	540377
LCSD 490-540377/3-A	Lab Control Sample Dup	Soluble	Solid	9056A	540377
MRL 490-540592/1	Lab Control Sample	Total/NA	Solid	9056A	
MRL 490-540592/33	Lab Control Sample	Total/NA	Solid	9056A	

## Metals

### Prep Batch: 264922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-1	CUF-BS-FB05-20180827	Total Recoverable	Water	3005A	
490-158137-8	CUF-BS-EB02-20180827	Total Recoverable	Water	3005A	
MB 180-264922/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-264922/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-264922/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

### Prep Batch: 264947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	3050B	
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Total/NA	Solid	3050B	
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Total/NA	Solid	3050B	
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Total/NA	Solid	3050B	

TestAmerica Nashville

# QC Association Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Metals (Continued)

### Prep Batch: 264947 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Total/NA	Solid	3050B	
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	3050B	
MB 180-264947/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 180-264947/2-A	Lab Control Sample	Total/NA	Solid	3050B	
490-158137-7 MS	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	3050B	
490-158137-7 MSD	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	3050B	

### Analysis Batch: 265014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-1	CUF-BS-FB05-20180827	Total Recoverable	Water	EPA 6020A	264922
490-158137-8	CUF-BS-EB02-20180827	Total Recoverable	Water	EPA 6020A	264922
MB 180-264922/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	264922
LCS 180-264922/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	264922
LCSD 180-264922/3-A	Lab Control Sample Dup	Total Recoverable	Water	EPA 6020A	264922

### Analysis Batch: 265026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	EPA 6020A	264947
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Total/NA	Solid	EPA 6020A	264947
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Total/NA	Solid	EPA 6020A	264947
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Total/NA	Solid	EPA 6020A	264947
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Total/NA	Solid	EPA 6020A	264947
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	EPA 6020A	264947
MB 180-264947/1-A	Method Blank	Total/NA	Solid	EPA 6020A	264947
LCS 180-264947/2-A	Lab Control Sample	Total/NA	Solid	EPA 6020A	264947
490-158137-7 MS	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	EPA 6020A	264947
490-158137-7 MSD	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	EPA 6020A	264947

### Prep Batch: 539512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-1	CUF-BS-FB05-20180827	Total/NA	Water	7470A	
490-158137-8	CUF-BS-EB02-20180827	Total/NA	Water	7470A	
MB 490-539512/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-539512/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-158137-1 MS	CUF-BS-FB05-20180827	Total/NA	Water	7470A	
490-158137-1 MSD	CUF-BS-FB05-20180827	Total/NA	Water	7470A	

### Analysis Batch: 540387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-1	CUF-BS-FB05-20180827	Total/NA	Water	7470A	539512
490-158137-8	CUF-BS-EB02-20180827	Total/NA	Water	7470A	539512
MB 490-539512/1-A	Method Blank	Total/NA	Water	7470A	539512
LCS 490-539512/2-A	Lab Control Sample	Total/NA	Water	7470A	539512
490-158137-1 MS	CUF-BS-FB05-20180827	Total/NA	Water	7470A	539512
490-158137-1 MSD	CUF-BS-FB05-20180827	Total/NA	Water	7470A	539512

### Prep Batch: 541313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	7471B	
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Total/NA	Solid	7471B	
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Total/NA	Solid	7471B	

TestAmerica Nashville

# QC Association Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Metals (Continued)

### Prep Batch: 541313 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Total/NA	Solid	7471B	
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Total/NA	Solid	7471B	
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	7471B	
MB 490-541313/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 490-541313/2-A	Lab Control Sample	Total/NA	Solid	7471B	
490-158137-2 MS	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	7471B	
490-158137-2 MSD	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	7471B	

### Analysis Batch: 541520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	7471B	541313
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Total/NA	Solid	7471B	541313
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Total/NA	Solid	7471B	541313
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Total/NA	Solid	7471B	541313
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Total/NA	Solid	7471B	541313
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	7471B	541313
MB 490-541313/1-A	Method Blank	Total/NA	Solid	7471B	541313
LCS 490-541313/2-A	Lab Control Sample	Total/NA	Solid	7471B	541313
490-158137-2 MS	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	7471B	541313
490-158137-2 MSD	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	7471B	541313

## General Chemistry

### Analysis Batch: 539184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	Moisture	
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Total/NA	Solid	Moisture	
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Total/NA	Solid	Moisture	
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Total/NA	Solid	Moisture	
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Total/NA	Solid	Moisture	
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Total/NA	Solid	Moisture	
490-158137-2 DU	CUF-BS-BG01-0.0/0.5-20180827	Total/NA	Solid	Moisture	

### Leach Batch: 539284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Soluble	Solid	DI Leach	
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Soluble	Solid	DI Leach	
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Soluble	Solid	DI Leach	
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Soluble	Solid	DI Leach	
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Soluble	Solid	DI Leach	
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Soluble	Solid	DI Leach	
490-158137-2 DU	CUF-BS-BG01-0.0/0.5-20180827	Soluble	Solid	DI Leach	

### Analysis Batch: 539285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-2	CUF-BS-BG01-0.0/0.5-20180827	Soluble	Solid	9045D	539284
490-158137-3	CUF-BS-BG01-1.0/3.0-20180827	Soluble	Solid	9045D	539284
490-158137-4	CUF-BS-BG01-6.5/8.5-20180827	Soluble	Solid	9045D	539284
490-158137-5	CUF-BS-BG01-11.5/13.5-20180827	Soluble	Solid	9045D	539284
490-158137-6	CUF-BS-BG01-16.5/18.5-20180827	Soluble	Solid	9045D	539284

TestAmerica Nashville



## QC Association Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

### General Chemistry (Continued)

#### Analysis Batch: 539285 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-158137-7	CUF-BS-BG01-21.5/23.5-20180827	Soluble	Solid	9045D	539284
LCS 490-539285/1	Lab Control Sample	Total/NA	Solid	9045D	
490-158137-2 DU	CUF-BS-BG01-0.0/0.5-20180827	Soluble	Solid	9045D	539284



# Lab Chronicle

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-FB05-20180827**

**Date Collected: 08/27/18 12:31**

**Date Received: 08/27/18 19:00**

**Lab Sample ID: 490-158137-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			539643	08/29/18 16:51	SW1	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	539512	08/29/18 14:15	CSL	TAL NSH
Total/NA	Analysis	7470A		1			540387	08/31/18 21:03	CSL	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	264922	12/07/18 13:06	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			265014	12/08/18 11:12	WTR	TAL PIT

**Client Sample ID: CUF-BS-BG01-0.0/0.5-20180827**

**Date Collected: 08/27/18 13:12**

**Date Received: 08/27/18 19:00**

**Lab Sample ID: 490-158137-2**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			3.0243 g	30 mL	540377	09/04/18 07:07	JHS	TAL NSH
Soluble	Analysis	9056A		1			540592	09/04/18 14:15	JHS	TAL NSH
Total/NA	Prep	7471B			0.614 g	100 mL	541313	09/07/18 15:33	CSL	TAL NSH
Total/NA	Analysis	7471B		1			541520	09/08/18 15:08	CSL	TAL NSH
Total/NA	Prep	3050B			1.00 g	100 mL	264947	12/07/18 15:19	NAM	TAL PIT
Total/NA	Analysis	EPA 6020A		1			265026	12/08/18 22:32	WTR	TAL PIT
Soluble	Leach	DI Leach			20 g	20 mL	539284	08/28/18 19:08	MXX	TAL NSH
Soluble	Analysis	9045D		1	20 g	20 mL	539285	08/28/18 19:15	MXX	TAL NSH
Total/NA	Analysis	Moisture		1			539184	08/28/18 13:18	BAA	TAL NSH

**Client Sample ID: CUF-BS-BG01-1.0/3.0-20180827**

**Date Collected: 08/27/18 13:59**

**Date Received: 08/27/18 19:00**

**Lab Sample ID: 490-158137-3**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			3.0322 g	30 mL	540377	09/04/18 07:07	JHS	TAL NSH
Soluble	Analysis	9056A		1			540592	09/04/18 14:27	JHS	TAL NSH
Total/NA	Prep	7471B			0.625 g	100 mL	541313	09/07/18 15:33	CSL	TAL NSH
Total/NA	Analysis	7471B		1			541520	09/08/18 15:21	CSL	TAL NSH
Total/NA	Prep	3050B			1.03 g	100 mL	264947	12/07/18 15:19	NAM	TAL PIT
Total/NA	Analysis	EPA 6020A		1			265026	12/08/18 22:37	WTR	TAL PIT
Soluble	Leach	DI Leach			20 g	20 mL	539284	08/28/18 19:08	MXX	TAL NSH
Soluble	Analysis	9045D		1	20 g	20 mL	539285	08/28/18 19:15	MXX	TAL NSH
Total/NA	Analysis	Moisture		1			539184	08/28/18 13:18	BAA	TAL NSH

**Client Sample ID: CUF-BS-BG01-6.5/8.5-20180827**

**Date Collected: 08/27/18 14:19**

**Date Received: 08/27/18 19:00**

**Lab Sample ID: 490-158137-4**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			2.9926 g	30 mL	540377	09/04/18 07:07	JHS	TAL NSH
Soluble	Analysis	9056A		1			540592	09/04/18 14:39	JHS	TAL NSH

TestAmerica Nashville

# Lab Chronicle

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			0.622 g	100 mL	541313	09/07/18 15:33	CSL	TAL NSH
Total/NA	Analysis	7471B		1			541520	09/08/18 15:24	CSL	TAL NSH
Total/NA	Prep	3050B			1.05 g	100 mL	264947	12/07/18 15:19	NAM	TAL PIT
Total/NA	Analysis	EPA 6020A		1			265026	12/08/18 22:41	WTR	TAL PIT
Soluble	Leach	DI Leach			20 g	20 mL	539284	08/28/18 19:08	MXX	TAL NSH
Soluble	Analysis	9045D		1	20 g	20 mL	539285	08/28/18 19:15	MXX	TAL NSH
Total/NA	Analysis	Moisture		1			539184	08/28/18 13:18	BAA	TAL NSH

Client Sample ID: CUF-BS-BG01-11.5/13.5-20180827

Lab Sample ID: 490-158137-5

Date Collected: 08/27/18 14:45

Matrix: Solid

Date Received: 08/27/18 19:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			2.9788 g	30 mL	540377	09/04/18 07:07	JHS	TAL NSH
Soluble	Analysis	9056A		1			540592	09/04/18 14:50	JHS	TAL NSH
Total/NA	Prep	7471B			0.596 g	100 mL	541313	09/07/18 15:33	CSL	TAL NSH
Total/NA	Analysis	7471B		1			541520	09/08/18 15:27	CSL	TAL NSH
Total/NA	Prep	3050B			1.00 g	100 mL	264947	12/07/18 15:19	NAM	TAL PIT
Total/NA	Analysis	EPA 6020A		1			265026	12/08/18 22:46	WTR	TAL PIT
Soluble	Leach	DI Leach			20 g	20 mL	539284	08/28/18 19:08	MXX	TAL NSH
Soluble	Analysis	9045D		1	20 g	20 mL	539285	08/28/18 19:15	MXX	TAL NSH
Total/NA	Analysis	Moisture		1			539184	08/28/18 13:18	BAA	TAL NSH

Client Sample ID: CUF-BS-BG01-16.5/18.5-20180827

Lab Sample ID: 490-158137-6

Date Collected: 08/27/18 15:05

Matrix: Solid

Date Received: 08/27/18 19:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			3.0066 g	30 mL	540377	09/04/18 07:07	JHS	TAL NSH
Soluble	Analysis	9056A		1			540592	09/04/18 15:02	JHS	TAL NSH
Total/NA	Prep	7471B			0.615 g	100 mL	541313	09/07/18 15:33	CSL	TAL NSH
Total/NA	Analysis	7471B		1			541520	09/08/18 15:35	CSL	TAL NSH
Total/NA	Prep	3050B			0.96 g	100 mL	264947	12/07/18 15:19	NAM	TAL PIT
Total/NA	Analysis	EPA 6020A		1			265026	12/08/18 23:04	WTR	TAL PIT
Soluble	Leach	DI Leach			20 g	20 mL	539284	08/28/18 19:08	MXX	TAL NSH
Soluble	Analysis	9045D		1	20 g	20 mL	539285	08/28/18 19:15	MXX	TAL NSH
Total/NA	Analysis	Moisture		1			539184	08/28/18 13:18	BAA	TAL NSH

Client Sample ID: CUF-BS-BG01-21.5/23.5-20180827

Lab Sample ID: 490-158137-7

Date Collected: 08/27/18 15:25

Matrix: Solid

Date Received: 08/27/18 19:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			2.9785 g	30 mL	540377	09/04/18 07:07	JHS	TAL NSH
Soluble	Analysis	9056A		1			540592	09/04/18 15:13	JHS	TAL NSH
Total/NA	Prep	7471B			0.612 g	100 mL	541313	09/07/18 15:33	CSL	TAL NSH
Total/NA	Analysis	7471B		1			541520	09/08/18 15:38	CSL	TAL NSH

TestAmerica Nashville

# Lab Chronicle

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

**Client Sample ID: CUF-BS-BG01-21.5/23.5-20180827**

**Lab Sample ID: 490-158137-7**

**Date Collected: 08/27/18 15:25**

**Matrix: Solid**

**Date Received: 08/27/18 19:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.97 g	100 mL	264947	12/07/18 15:19	NAM	TAL PIT
Total/NA	Analysis	EPA 6020A		1			265026	12/08/18 23:08	WTR	TAL PIT
Soluble	Leach	DI Leach			20 g	20 mL	539284	08/28/18 19:08	MXX	TAL NSH
Soluble	Analysis	9045D		1	20 g	20 mL	539285	08/28/18 19:15	MXX	TAL NSH
Total/NA	Analysis	Moisture		1			539184	08/28/18 13:18	BAA	TAL NSH

**Client Sample ID: CUF-BS-EB02-20180827**

**Lab Sample ID: 490-158137-8**

**Date Collected: 08/27/18 15:55**

**Matrix: Water**

**Date Received: 08/27/18 19:00**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			539643	08/29/18 17:26	SW1	TAL NSH
Total/NA	Prep	7470A			30 mL	30 mL	539512	08/29/18 14:15	CSL	TAL NSH
Total/NA	Analysis	7470A		1			540387	08/31/18 21:21	CSL	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	264922	12/07/18 13:06	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			265014	12/08/18 11:16	WTR	TAL PIT

## Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

## Method Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
7470A	Mercury (CVAA)	SW846	TAL NSH
7471B	Mercury (CVAA)	SW846	TAL NSH
9045D	pH	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH
7470A	Preparation, Mercury	SW846	TAL NSH
7471B	Preparation, Mercury	SW846	TAL NSH
DI Leach	Deionized Water Leaching Procedure	ASTM	TAL NSH

### Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Accreditation/Certification Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

## Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	06-30-19 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-19
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

## Laboratory: TestAmerica Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Nashville

## Accreditation/Certification Summary

Client: Environmental Standards Inc.  
Project/Site: CUF\_BS\_20180827\_1A

TestAmerica Job ID: 490-158137-1

### Laboratory: TestAmerica Pittsburgh (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19 *
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	01-28-19 *
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Nashville

## COOLER RECEIPT FORM



490-158137 Chain of Custody

Cooler Received/Opened On 8/28/2018 @ 1900

Time Samples Removed From Cooler \_\_\_\_\_ Time Samples Placed In Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # 1119 (last 4 digits, FedEx) Courier: \_\_\_\_\_  
IR Gun ID\_31470368 \_\_\_\_\_ pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_

2. Temperature of rep. sample or temp blank when opened: 2.5 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) EIA

7. Were custody seals on containers: YES NO 8-28-18 EIA and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES NO...NA If multiple coolers, sequence # 24

I certify that I unloaded the cooler and answered questions 7-14 (Initial) EIA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (Initial) EIA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (Initial) EIA

I certify that I attached a label with the unique LIMS number to each container (Initial) EIA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO..# \_\_\_\_\_

## COOLER RECEIPT FORM

Cooler Received/Opened On 8/28/2018 @ 1900

Time Samples Removed From Cooler \_\_\_\_\_ Time Samples Placed In Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # NA (last 4 digits, FedEx) Courier: \_\_\_\_\_  
IR Gun ID\_31470368 \_\_\_\_\_ pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_

2. Temperature of rep. sample or temp blank when opened: 3.3 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO...NA

If yes, how many and where: 2 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) EA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly?

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (initial) EA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO NA

b. Did the bottle labels indicate that the correct preservatives were used YES NO...NA

16. Was residual chlorine present? YES...NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) EA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) EA

I certify that I attached a label with the unique LIMS number to each container (initial) EA

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES...NO...# \_\_\_\_\_



## COOLER RECEIPT FORM

Cooler Received/Opened On 8/28/2018 @ 1900

Time Samples Removed From Cooler \_\_\_\_\_ Time Samples Placed In Storage \_\_\_\_\_ (2 Hour Window)

1. Tracking # NA (last 4 digits, FedEx) Courier: \_\_\_\_\_  
IR Gun ID 31470368 pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_
2. Temperature of rep. sample or temp blank when opened: 1.7 Degrees Celsius
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA
4. Were custody seals on outside of cooler? YES...NO...NA  
If yes, how many and where: 2 Front
5. Were the seals intact, signed, and dated correctly? YES...NO...NA
6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) EA

7. Were custody seals on containers: YES NO 8-28-18 EA and Intact YES...NO...NA  
Were these signed and dated correctly? YES...NO...NA 8-28-18 EA
8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None
9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None
10. Did all containers arrive in good condition (unbroken)? YES...NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA
12. Did all container labels and tags agree with custody papers? YES...NO...NA
- 13a. Were VOA vials received? YES...NO...NA
- b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES NO...NA If multiple coolers, sequence # NA

I certify that I unloaded the cooler and answered questions 7-14 (initial) EA

- 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO NA
  - b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA
  16. Was residual chlorine present? YES...NO NA
- I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) EA
17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA
  18. Did you sign the custody papers in the appropriate place? YES...NO...NA
  19. Were correct containers used for the analysis requested? YES...NO...NA
  20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) EA

I certify that I attached a label with the unique LIMS number to each container (initial) EA

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO..# \_\_\_\_\_



Tennessee Valley Authority

# TVA Environmental Investigations

## Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	1	of	3
COC No.:	CUF_BS_20180827_1A		
Task Desc.:	CUF_BS		

<b>Required Ship to Lab:</b> Lab Name: TestAmerica Nashville Lab Address: 29350 Foster Craigton Dr Nashville, TN 37204 Lab Pk: Gail Lage Phone/Fax: 615-301-5741/615-726-3404 Lab Email: Gail.Lage@testamchairs.com		<b>Required Project Information:</b> Project #: 177568239 Site Address: 815 Cumberland City Road Cumberland City, TN 37033 City: Roy Quinn State: TN Zip: 37033 Sampling Team Number: 1 Send EDD/Hard Copy to: kushal@envystat.com		<b>Required Sample Information:</b> Sampler: Suanna Bolden and Walker Padgett Sampling Company: Stattec Address: Warehouse Row North 1110 Market Street, Suite 214A Chattanooga TN (855) 619-8010	
<b>Lab Manager Contact Information:</b> Lab Pk: Gail Lage Phone/Fax: 615-301-5741/615-726-3404 Lab Email: Gail.Lage@testamchairs.com		<b>Analysis Turnaround Time</b> <input type="checkbox"/> BUSINESS DAYS <input type="checkbox"/> 24 Hours <input type="checkbox"/> 3 Business Days <input checked="" type="checkbox"/> 5 Business Days <input type="checkbox"/> 10 Business Days (Standard) TAT is different from below:			
<b>Sample ID</b> Samples IDs MUST BE UNIQUE		<b>SAMPLE LOCATION</b>		<b>SAMPLE TYPE</b>	
<b>ITEMS #</b>		<b>SAMPLE ID</b>		<b>SAMPLE TYPE</b>	
1 CUF-BS-FB05-20180827 2 CUF-BS-BG01-0.00.5-20180827 3 CUF-BS-BG01-1.03.0-20180827 4 CUF-BS-BG01-6.58.5-20180827 5 CUF-BS-BG01-11.5713.5-20180827 6 CUF-BS-BG01-16.518.5-20180827 7 CUF-BS-BG01-21.523.5-20180827 8 CUF-BS-EB02-20180827		BG-01 BG-01 BG-01 BG-01 BG-01 BG-01 BG-01 BG-01		NA NA 0.0 0.5 1.0 3.0 6.5 8.5 11.5 13.5 16.5 18.5 21.5 23.5 NA NA	
9 10 11 12 13		BG-01 BG-01 BG-01 BG-01 BG-01 BG-01 BG-01 BG-01		NA NA 0.0 0.5 1.0 3.0 6.5 8.5 11.5 13.5 16.5 18.5 21.5 23.5 NA NA	
Additional Comments/Special Instructions: Additional volume collected should be used for MS/MSDs. CUF_BACKGROUNDSOIL: Perform MS/MSD on sample identified above CUF_BACKGROUNDSOIL_BLANKS: Anions - unpreserved; Metals - preserved w/ HNO3 to pH<2		RELINQUISHED BY / AFFILIATION Suanna Bolden (Stattec)		DATE 8/27/2018	
ACCEPTED BY / AFFILIATION Suanna Bolden		DATE 8/27/2018		TIME 17:00	
SHIPPING METHOD: Counter		DATE 8/27/2018		TIME 17:00	
SAMPPLER NAME AND SIGNATURE Suanna Bolden		DATE 8/27/2018		TIME 17:00	
Sample on Ice?		Temperature in °C		Sample Receipt Conditions	
Trip Blank?		Sample Intact?		Sample Receipt Conditions	



Tennessee Valley Authority

# TVA Environmental Investigations

## Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	2	of	3
COC No.:	CUF BS 20180827_1B		
1	of	1	Pages
Task Desc:	CUF BS		

<b>Required Ship to Lab:</b> Lab Name: TestAmerica Nashville Lab Address: 29380 Foster Creighton Dr Nashville, TN 37204 Lab PHL: Gail Lage Phone/Fax: 615-301-5741/615-726-3404 Lab Email: Gail.Lage@testamericainc.com		<b>Required Project Information:</b> Site ID #: CUMBERLAND FOSSIL PLANT Project #: 17758209 Site Address: 815 Cumberland City Road City: Cumberland City, TN 37623 State: TN Zip: 37623 Site PM Name: Roy Quinn Phone/Fax: 423-751-3753 Site PM Email: rquinn@tva.gov		<b>Required Sampler Information:</b> Sampler: Suanna Bolden and Walker Padgett Sampling Company: Warehouse Row North 1110 Market Street, Suite 214A City/State: Chattanooga TN Phone: (699) 879-8010 Sampling Team Number: 1 Send EDD/Hard Copy to: tva-ed@tva.gov								
<b>Lab Manager Contact Information:</b> Lab PHL: Gail Lage Phone/Fax: 615-301-5741/615-726-3404 Lab Email: Gail.Lage@testamericainc.com		<b>Analysis Turnaround Time</b> <input type="checkbox"/> 24 Hours <input type="checkbox"/> 3 Business Days <input type="checkbox"/> 5 Business Days <input type="checkbox"/> 10 Business Days (Standard) TAT if different from below: _____ Standard (24 days)		<b>Analysis</b> CUF_BS-FB05-20180827 CUF_BS-BG01-0.0/0.5-20180827 CUF_BS-BG01-1.0/3.0-20180827 CUF_BS-BG01-6.5/8.5-20180827 CUF_BS-BG01-11.5/13.5-20180827 CUF_BS-BG01-16.5/18.5-20180827 CUF_BS-BG01-21.5/23.5-20180827 CUF_BS-EB02-20180827								
ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Start Depth Depth Unit	End Depth Depth Unit	MATRIX CODE	G- GRAB C-COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD
1	CUF_BS-FB05-20180827	BG-01	NA	NA	W	G	FB	8/27/2018	1231	3		
2	CUF_BS-BG01-0.0/0.5-20180827	BG-01	0.0	0.5	S	G	N	8/27/2018	1312	2		
3	CUF_BS-BG01-1.0/3.0-20180827	BG-01	1.0	3.0	S	G	N	8/27/2018	1359	2		
4	CUF_BS-BG01-6.5/8.5-20180827	BG-01	6.5	8.5	S	G	N	8/27/2018	1419	2		
5	CUF_BS-BG01-11.5/13.5-20180827	BG-01	11.5	13.5	S	G	N	8/27/2018	1445	2		
6	CUF_BS-BG01-16.5/18.5-20180827	BG-01	16.5	18.5	S	G	N	8/27/2018	1505	2		
7	CUF_BS-BG01-21.5/23.5-20180827	BG-01	21.5	23.5	S	G	N	8/27/2018	1525	2		
8	CUF_BS-EB02-20180827	BG-01	NA	NA	W	G	EB	8/27/2018	1555	3		
9												
10												
11												
12												
13												

Loc: 490  
158137

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suanna Bolden (Stanley)	8/27/2018	17:00	Suanna Bolden	8/27/2018	17:00
SHIPPING METHOD: Courier SHIPPING METHOD: 8/27/2018					
SAMPLER NAME AND SIGNATURE Suanna Bolden					

COOLER No.:	3	of	3
COC No.:	CUF BS 20180827 1A		
1		of	1
Task Desc:		Pages	
		CUF BS	

Chain-of-Custody / Analytical Request Document
Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

[illegible]