

**Data Validation Report
Tennessee Valley Authority
Watts Barr Fossil Plant
Environmental Investigation Plan
Background Soil Samples
Chain-of-Custody: WBF_BS_20190906_1A**

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the eight background soil samples and one aqueous blank collected on September 6, 2019, at the Tennessee Valley Authority (TVA) Watts Barr Fossil Plant facility. These samples were collectively analyzed by Eurofins TestAmerica, of Pittsburgh, Pennsylvania, for total metals by SW-846 Method 6020A; for total mercury by SW-846 Methods 7470A/7471B; for anions (specifically, chloride, fluoride, and sulfate) by SW-846 Method 9056A; and for pH by SW-846 Method 9045D.

This review was performed in accordance with the Environmental Investigation Plan for the Tennessee Valley Authority Watts Barr Fossil Plant (WBF EIP; Revision 3, November 2018). This review was performed with guidance from the National Functional Guidelines for Inorganic Data Review (US EPA, October 2004); the US EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001); and the US EPA Region IV Data Validation Standard Operating Procedures. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SW-846 Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SW-846 Methods utilized by the laboratory.

Summary

The analytical results and associated laboratory quality control (QC) samples were reviewed to determine the integrity of the reported analytical results and to ensure that the data met the established data quality objectives. This QA review includes all samples in Eurofins TestAmerica Job Number 180-95322-1.

The samples that have undergone Stage 4 data validation are listed below:

Sample Identification	Laboratory Sample Identification	Job Number	Matrix	Date Sample Collected	Parameters Examined
WBF-BS-BG04-1.5/3.5-20190906	180-95322-1	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-BG04-6.5/8.5-20190906	180-95322-2	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-BG04-11.5/13.5-20190906	180-95322-3	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-BG04-16.5/18.5-20190906	180-95322-4	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-BG04-21.5/23.5-20190906	180-95322-5	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-BG04-26.5/28.5-20190906	180-95322-6	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-BG04-31.5/33.5-20190906	180-95322-7	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-BG04-0.0/0.5-20190906	180-95322-8	180-95322-1	Soil	9/6/19	M, Hg, A, pH
WBF-BS-FB03-20190906 (Field Blank)	180-95322-9	180-95322-1	Aq	9/6/19	M, Hg, A

Parameters Examined

- M - Total Metals by SW-846 Method 6020A.
- Hg - Total Mercury by SW-846 Methods 7470A/7471B.
- A - Anions (specifically, chloride, fluoride, and sulfate) by SW-846 Method 9056A.
- pH - pH by SW-846 Method 9045D.
- Aq - Aqueous.



Items Reviewed	
Holding Times	Instrument Tuning and Calibrations
Sample Preservation	Reporting Limit (RL) Standard Recoveries
Chain-of-Custody (COC) Record and Case Narrative	Internal Standard Recoveries
Blank Results	Serial Dilution Analysis
Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results	Post-Digestion Spike Results
Laboratory Control Sample (LCS) Results	Sample Preparation
Laboratory Duplicate Results	Analytical Sequence
Quantitation of Positive Results	

Comments and Exceptions

- All analyses performed for the sampling event were in compliance with the requirements set forth in the EIP.

Qualifier Summary

Analyte(s)	Job Number	Samples	Validation Qualifier(s)	Reason for Qualification
fluoride	180-95322-1	All samples except WBF-BS-FB03-20190906	J/UR	M-
thallium	180-95322-1	WBF-BS-BG04-11.5/13.5-20190906, WBF-BS-BG04-16.5/18.5-20190906, WBF-BS-BG04-21.5/23.5-20190906, WBF-BS-BG04-26.5/28.5-20190906, and WBF-BS-BG04-31.5/33.5-20190906	U*	BL
antimony	180-95322-1	All samples except WBF-BS-FB03-20190906	J/UJ	M-
zinc	180-95322-1	All samples except WBF-BS-FB03-20190906	J	SD
lead and thallium	180-95322-1	WBF-BS-BG04-1.5/3.5-20190906, WBF-BS-BG04-6.5/8.5-20190906, and WBF-BS-BG04-0.0/0.5-20190906	J (unless previously flagged "U*")	I
antimony, arsenic, cadmium, molybdenum, selenium, and silver	180-95322-1	WBF-BS-BG04-1.5/3.5-20190906	J	I
selenium	180-95322-1	WBF-BS-BG04-6.5/8.5-20190906	J	ZZ

Unless otherwise qualified, all positive results reported between the method detection limit (MDL) and quantitation limit (QL) should be considered estimated and have been flagged "J" on the data tables. (Reason Code: RL)

Review performed by: Danielle Coles, Senior Quality Assurance Chemist
Review reviewed by: Erin E. Rodgers, Associate Principal Chemist
Review approved by: Andrew L. Piasecki, Senior Quality Assurance Chemist
Review approved by: Rock J. Vitale, CEAC, Technical Director of Chemistry/Principal
Date review completed: 10/9/19



SECTION 2

ANALYTICAL RESULTS

INORGANIC DATA QUALIFIERS

- U* This result should be considered "not-detected" because it was detected in a rinsate blank or laboratory blank at a similar level.
- UR Unreliable reporting limit; analyte may or may not be present in sample.
- R Unreliable positive result; analyte may or may not be present in sample.
- J Quantitation is approximate due to limitations identified during data validation.
- UJ This analyte was not detected, but the reporting limit may or may not be higher due to a bias identified during data validation.

REASON CODES AND EXPLANATIONS

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
BN	Negative laboratory blank contamination.
C	Initial and/or Continuing Calibration issue, indeterminate bias.
C+	Initial and/or Continuing Calibration issue. The result may be biased high.
C-	Initial and/or Continuing Calibration issue. The result may be biased low.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
I	Internal standard recovery outside of acceptance limits.
L	LCS and LCSD recoveries outside of acceptance limits, indeterminate bias.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits, indeterminate bias.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
MP	MS/MSD imprecision.
P	Post-digestion spike recoveries outside of acceptance limits, indeterminate bias.
P+	Post-digestion spike recovery outside of acceptance limits. The result may be biased high.
P-	Post-digestion spike recovery outside of acceptance limits. The result may be biased low.
Q	Chemical Preservation issue.
R	RL standards outside of acceptance limits, indeterminate bias.
R+	RL standard(s) outside of acceptance limits. The result may be biased high.
R-	RL standard(s) outside of acceptance limits. The result may be biased low.
RL	Reported result between the MDL and the QL.
T	Temperature preservation issue.
SD	Serial Dilution imprecision.
X	Percent solids < 50%.
Y+	Chemical Yield outside of acceptance limits. The result may be biased high.
Y-	Chemical yield outside of acceptance limits. The result may be biased low.
Z	ICP or ICP/MS Interference.
ZZ	Other.

Lab Sample ID	180-95322-1
Sys Sample Code	WBF-BS-BG04-1.5/3.5-20190906
Sample Name	WBF-BS-BG04-1.5/3.5-20190906
Sample Date	9/6/2019 8:41:00 AM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	22.5									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG	8.89	J	M-,I	0.0808	0.0808	0.261	Y	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	12.7	J	I	0.0339	0.0339	0.130	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	119			0.167	0.167	1.30	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	4.50			0.00977	0.00977	0.130	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG	55.9			1.76	1.76	10.4	Y	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	3.29	J	I	0.0222	0.0222	0.130	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	9800			11.7	11.7	65.2	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	26.3			0.108	0.108	0.261	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	12.4			0.0108	0.0108	0.0652	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	21.3			0.147	0.147	0.261	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	19.8	J	I	0.0456	0.0456	0.130	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	24.5			0.360	0.360	0.652	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	4.41	J	I	0.212	0.212	0.652	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	19.7			0.0795	0.0795	0.130	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	6.58	J	I	0.159	0.159	0.652	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG	8.68	J	I	0.0352	0.0352	0.130	Y	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG	6.91	J	I	0.0326	0.0326	0.130	Y	Yes	1	DRY
	Vanadium	7440-62-2	T	MG/KG	42.2			0.0834	0.0834	0.130	Y	Yes	1	DRY
	Zinc	7440-66-6	T	MG/KG	73.2	J	SD	0.435	0.435	0.652	Y	Yes	1	DRY
SW-846 7471B	Mercury	7439-97-6	T	MG/KG	0.0214	J	RL	0.0173	0.0173	0.0399	Y	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	5.6			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		4.83	4.83	12.5	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG		UR	M-	0.847	0.847	1.25	N	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG	21.8			8.46	8.46	12.5	Y	Yes	1	DRY

Lab Sample ID	180-95322-2
Sys Sample Code	WBF-BS-BG04-6.5/8.5-20190906
Sample Name	WBF-BS-BG04-6.5/8.5-20190906
Sample Date	9/6/2019 8:55:00 AM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	17.1									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG	0.166	J	M-	0.0755	0.0755	0.244	Y	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	5.85			0.0317	0.0317	0.122	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	121			0.156	0.156	1.22	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	1.23			0.00914	0.00914	0.122	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG	2.47	J	RL	1.64	1.64	9.74	Y	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	0.0518	J	RL	0.0207	0.0207	0.122	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	343			10.9	10.9	60.9	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	23.2			0.101	0.101	0.244	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	28.2			0.0101	0.0101	0.0609	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	19.5			0.138	0.138	0.244	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	19.2	J	I	0.0426	0.0426	0.122	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	18.0			0.336	0.336	0.609	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	0.930			0.199	0.199	0.609	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	18.3			0.0743	0.0743	0.122	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	0.760	J	ZZ	0.149	0.149	0.609	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG			U	0.0329	0.0329	0.122	N	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG	0.390	J	I	0.0305	0.0305	0.122	Y	Yes	1	DRY
Vanadium	7440-62-2	T	MG/KG	35.5			0.0780	0.0780	0.122	Y	Yes	1	DRY	
Zinc	7440-66-6	T	MG/KG	64.8	J	SD	0.407	0.407	0.609	Y	Yes	1	DRY	
SW-846 7471B	Mercury	7439-97-6	T	MG/KG	0.0247	J	RL	0.0172	0.0172	0.0398	Y	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	5.9			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		4.62	4.62	11.9	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG		UR	M-	0.810	0.810	1.19	N	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG	9.75	J	RL	8.09	8.09	11.9	Y	Yes	1	DRY

Lab Sample ID	180-95322-3
Sys Sample Code	WBF-BS-BG04-11.5/13.5-20190906
Sample Name	WBF-BS-BG04-11.5/13.5-20190906
Sample Date	9/6/2019 9:16:00 AM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	20.9									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG	0.138	J	M-	0.0768	0.0768	0.248	Y	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	5.30			0.0322	0.0322	0.124	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	124			0.159	0.159	1.24	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	1.21			0.00930	0.00930	0.124	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG	2.74	J	RL	1.67	1.67	9.92	Y	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	0.120	J	RL	0.0211	0.0211	0.124	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	645			11.1	11.1	62.0	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	22.1			0.103	0.103	0.248	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	13.4			0.0103	0.0103	0.0620	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	19.3			0.140	0.140	0.248	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	15.8			0.0434	0.0434	0.124	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	18.4			0.342	0.342	0.620	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	0.855			0.202	0.202	0.620	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	19.8			0.0756	0.0756	0.124	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	0.830			0.151	0.151	0.620	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG			U	0.0335	0.0335	0.124	N	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG			U*	0.355	0.355	0.355	N	Yes	1	DRY
Vanadium	7440-62-2	T	MG/KG	37.0			0.0793	0.0793	0.124	Y	Yes	1	DRY	
Zinc	7440-66-6	T	MG/KG	64.6	J	SD	0.414	0.414	0.620	Y	Yes	1	DRY	
SW-846 7471B	Mercury	7439-97-6	T	MG/KG	0.0337	J	RL	0.0164	0.0164	0.0379	Y	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	6.2			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		4.87	4.87	12.5	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG	1.56	J	M-	0.853	0.853	1.25	Y	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG	9.97	J	RL	8.51	8.51	12.5	Y	Yes	1	DRY

Lab Sample ID	180-95322-4
Sys Sample Code	WBF-BS-BG04-16.5/18.5-20190906
Sample Name	WBF-BS-BG04-16.5/18.5-20190906
Sample Date	9/6/2019 9:36:00 AM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	21.1									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG	0.124	J	M-	0.0770	0.0770	0.248	Y	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	4.63			0.0323	0.0323	0.124	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	115			0.159	0.159	1.24	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	1.18			0.00931	0.00931	0.124	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG	1.97	J	RL	1.68	1.68	9.94	Y	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	0.0976	J	RL	0.0211	0.0211	0.124	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	749			11.1	11.1	62.1	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	23.8			0.103	0.103	0.248	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	13.0			0.0103	0.0103	0.0621	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	18.6			0.140	0.140	0.248	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	14.1			0.0435	0.0435	0.124	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	17.6			0.343	0.343	0.621	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	0.854			0.202	0.202	0.621	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	19.4			0.0758	0.0758	0.124	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	0.944			0.152	0.152	0.621	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG			U	0.0335	0.0335	0.124	N	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG			U*	0.329	0.329	0.329	N	Yes	1	DRY
Vanadium	7440-62-2	T	MG/KG	38.0			0.0795	0.0795	0.124	Y	Yes	1	DRY	
Zinc	7440-66-6	T	MG/KG	65.4	J	SD	0.415	0.415	0.621	Y	Yes	1	DRY	
SW-846 7471B	Mercury	7439-97-6	T	MG/KG	0.0356			0.0149	0.0149	0.0344	Y	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	6.4			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		4.86	4.86	12.5	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG	1.65	J	M-	0.852	0.852	1.25	Y	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG	11.7	J	RL	8.51	8.51	12.5	Y	Yes	1	DRY

Lab Sample ID	180-95322-5
Sys Sample Code	WBF-BS-BG04-21.5/23.5-20190906
Sample Name	WBF-BS-BG04-21.5/23.5-20190906
Sample Date	9/6/2019 10:07:00 AM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	24.3									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG	0.0975	J	M-	0.0796	0.0796	0.257	Y	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	3.53			0.0334	0.0334	0.128	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	98.8			0.164	0.164	1.28	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	0.893			0.00962	0.00962	0.128	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG		U		1.73	1.73	10.3	N	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	0.0706	J	RL	0.0218	0.0218	0.128	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	771			11.5	11.5	64.2	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	21.6			0.107	0.107	0.257	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	10.2			0.0107	0.0107	0.0642	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	15.2			0.145	0.145	0.257	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	11.5			0.0449	0.0449	0.128	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	15.3			0.354	0.354	0.642	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	0.832			0.209	0.209	0.642	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	15.1			0.0783	0.0783	0.128	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	0.661			0.157	0.157	0.642	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG		U		0.0346	0.0346	0.128	N	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG		U*	BL	0.321	0.321	0.321	N	Yes	1	DRY
Vanadium	7440-62-2	T	MG/KG	30.6			0.0821	0.0821	0.128	Y	Yes	1	DRY	
Zinc	7440-66-6	T	MG/KG	57.2	J	SD	0.429	0.429	0.642	Y	Yes	1	DRY	
SW-846 7471B	Mercury	7439-97-6	T	MG/KG	0.0270	J	RL	0.0174	0.0174	0.0403	Y	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	6.8			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		5.04	5.04	13.0	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG	2.19	J	M-	0.883	0.883	1.30	Y	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG		U		8.82	8.82	13.0	N	Yes	1	DRY

Lab Sample ID	180-95322-6
Sys Sample Code	WBF-BS-BG04-26.5/28.5-20190906
Sample Name	WBF-BS-BG04-26.5/28.5-20190906
Sample Date	9/6/2019 10:40:00 AM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	27.5									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG		UJ	M-	0.0839	0.0839	0.271	N	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	2.66			0.0352	0.0352	0.135	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	83.9			0.173	0.173	1.35	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	0.910			0.0101	0.0101	0.135	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG		U		1.83	1.83	10.8	N	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	0.0598	J	RL	0.0230	0.0230	0.135	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	759			12.1	12.1	67.7	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	21.2			0.112	0.112	0.271	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	9.37			0.0112	0.0112	0.0677	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	13.5			0.153	0.153	0.271	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	9.14			0.0474	0.0474	0.135	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	13.2			0.373	0.373	0.677	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	0.480	J	RL	0.221	0.221	0.677	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	14.4			0.0825	0.0825	0.135	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	0.577	J	RL	0.165	0.165	0.677	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG		U		0.0365	0.0365	0.135	N	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG		U*	BL	0.279	0.279	0.279	N	Yes	1	DRY
Vanadium	7440-62-2	T	MG/KG	30.5			0.0866	0.0866	0.135	Y	Yes	1	DRY	
Zinc	7440-66-6	T	MG/KG	54.1	J	SD	0.452	0.452	0.677	Y	Yes	1	DRY	
SW-846 7471B	Mercury	7439-97-6	T	MG/KG	0.0224	J	RL	0.0148	0.0148	0.0342	Y	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	7.0			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		5.19	5.19	13.4	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG	2.35	J	M-	0.910	0.910	1.34	Y	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG	11.3	J	RL	9.08	9.08	13.4	Y	Yes	1	DRY

Lab Sample ID	180-95322-7
Sys Sample Code	WBF-BS-BG04-31.5/33.5-20190906
Sample Name	WBF-BS-BG04-31.5/33.5-20190906
Sample Date	9/6/2019 11:24:00 AM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	13.4									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG		UJ	M-	0.0702	0.0702	0.227	N	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	4.68			0.0294	0.0294	0.113	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	38.1			0.145	0.145	1.13	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	0.296			0.00849	0.00849	0.113	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG		U		1.53	1.53	9.06	N	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	0.0227	J	RL	0.0193	0.0193	0.113	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	294			10.1	10.1	56.6	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	14.3			0.0940	0.0940	0.227	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	4.06			0.00940	0.00940	0.0566	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	4.09			0.128	0.128	0.227	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	4.12			0.0396	0.0396	0.113	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	2.93			0.313	0.313	0.566	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	0.572			0.185	0.185	0.566	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	5.84			0.0691	0.0691	0.113	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	0.184	J	RL	0.138	0.138	0.566	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG		U		0.0306	0.0306	0.113	N	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG		U*	BL	0.109	0.109	0.113	N	Yes	1	DRY
Vanadium	7440-62-2	T	MG/KG	7.76			0.0725	0.0725	0.113	Y	Yes	1	DRY	
Zinc	7440-66-6	T	MG/KG	18.5	J	SD	0.378	0.378	0.566	Y	Yes	1	DRY	
SW-846 7471B	Mercury	7439-97-6	T	MG/KG		U		0.0146	0.0146	0.0336	N	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	7.0			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		4.42	4.42	11.4	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG		UR	M-	0.775	0.775	1.14	N	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG		U		7.74	7.74	11.4	N	Yes	1	DRY

Lab Sample ID	180-95322-8
Sys Sample Code	WBF-BS-BG04-0.0/0.5-20190906
Sample Name	WBF-BS-BG04-0.0/0.5-20190906
Sample Date	9/6/2019 12:24:00 PM
Location	WBF-BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
	Percent Moisture:			%	15.7									
SW-846 6020A	Antimony	7440-36-0	T	MG/KG	0.187	J	M-	0.0735	0.0735	0.237	Y	Yes	1	DRY
	Arsenic	7440-38-2	T	MG/KG	4.07			0.0308	0.0308	0.119	Y	Yes	1	DRY
	Barium	7440-39-3	T	MG/KG	119			0.152	0.152	1.19	Y	Yes	1	DRY
	Beryllium	7440-41-7	T	MG/KG	1.27			0.00889	0.00889	0.119	Y	Yes	1	DRY
	Boron	7440-42-8	T	MG/KG	3.10	J	RL	1.60	1.60	9.49	Y	Yes	1	DRY
	Cadmium	7440-43-9	T	MG/KG	0.119			0.0202	0.0202	0.119	Y	Yes	1	DRY
	Calcium	7440-70-2	T	MG/KG	997			10.6	10.6	59.3	Y	Yes	1	DRY
	Chromium	7440-47-3	T	MG/KG	18.4			0.0984	0.0984	0.237	Y	Yes	1	DRY
	Cobalt	7440-48-4	T	MG/KG	13.2			0.00984	0.00984	0.0593	Y	Yes	1	DRY
	Copper	7440-50-8	T	MG/KG	11.8			0.134	0.134	0.237	Y	Yes	1	DRY
	Lead	7439-92-1	T	MG/KG	18.2	J	I	0.0415	0.0415	0.119	Y	Yes	1	DRY
	Lithium	7439-93-2	T	MG/KG	15.9			0.327	0.327	0.593	Y	Yes	1	DRY
	Molybdenum	7439-98-7	T	MG/KG	0.659			0.193	0.193	0.593	Y	Yes	1	DRY
	Nickel	7440-02-0	T	MG/KG	14.8			0.0723	0.0723	0.119	Y	Yes	1	DRY
	Selenium	7782-49-2	T	MG/KG	1.28			0.145	0.145	0.593	Y	Yes	1	DRY
	Silver	7440-22-4	T	MG/KG	0.0362	J	RL	0.0320	0.0320	0.119	Y	Yes	1	DRY
	Thallium	7440-28-0	T	MG/KG	0.444	J	I	0.0296	0.0296	0.119	Y	Yes	1	DRY
Vanadium	7440-62-2	T	MG/KG	25.6			0.0759	0.0759	0.119	Y	Yes	1	DRY	
Zinc	7440-66-6	T	MG/KG	57.6	J	SD	0.396	0.396	0.593	Y	Yes	1	DRY	
SW-846 7471B	Mercury	7439-97-6	T	MG/KG	0.0309	J	RL	0.0154	0.0154	0.0356	Y	Yes	1	DRY
SW-846 9045D	pH at 25 Degrees C	PH	N	SU	6.1			0.1	0.1	0.1	Y	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/KG		U		4.56	4.56	11.8	N	Yes	1	DRY
	Fluoride	16984-48-8	N	MG/KG		UR	M-	0.799	0.799	1.18	N	Yes	1	DRY
	Sulfate	14808-79-8	N	MG/KG		U		7.98	7.98	11.8	N	Yes	1	DRY

Lab Sample ID	180-95322-9
Sys Sample Code	WBF-BS-FB03-20190906
Sample Name	WBF-BS-FB03-20190906
Sample Date	9/6/2019 12:15:00 PM
Location	WBF-BG-04
Sample Type	FB
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
SW-846 6020A	Antimony	7440-36-0	T	MG/L	0.000527	J	RL	0.000378	0.000378	0.00200	Y	Yes	1	NA
	Arsenic	7440-38-2	T	MG/L	0.000347	J	RL	0.000323	0.000323	0.00100	Y	Yes	1	NA
	Barium	7440-39-3	T	MG/L		U		0.00160	0.00160	0.0100	N	Yes	1	NA
	Beryllium	7440-41-7	T	MG/L		U		0.000182	0.000182	0.00100	N	Yes	1	NA
	Boron	7440-42-8	T	MG/L		U		0.0386	0.0386	0.0800	N	Yes	1	NA
	Cadmium	7440-43-9	T	MG/L		U		0.000125	0.000125	0.00100	N	Yes	1	NA
	Calcium	7440-70-2	T	MG/L		U		0.127	0.127	0.500	N	Yes	1	NA
	Chromium	7440-47-3	T	MG/L	0.00274			0.00153	0.00153	0.00200	Y	Yes	1	NA
	Cobalt	7440-48-4	T	MG/L		U		0.0000750	0.0000750	0.000500	N	Yes	1	NA
	Copper	7440-50-8	T	MG/L		U		0.000627	0.000627	0.00200	N	Yes	1	NA
	Lead	7439-92-1	T	MG/L		U		0.000128	0.000128	0.00100	N	Yes	1	NA
	Lithium	7439-93-2	T	MG/L		U		0.00339	0.00339	0.00500	N	Yes	1	NA
	Molybdenum	7439-98-7	T	MG/L		U		0.000610	0.000610	0.00500	N	Yes	1	NA
	Nickel	7440-02-0	T	MG/L		U		0.000336	0.000336	0.00100	N	Yes	1	NA
	Selenium	7782-49-2	T	MG/L		U		0.00151	0.00151	0.00500	N	Yes	1	NA
	Silver	7440-22-4	T	MG/L		U		0.000177	0.000177	0.00100	N	Yes	1	NA
	Thallium	7440-28-0	T	MG/L		U		0.000148	0.000148	0.00100	N	Yes	1	NA
	Vanadium	7440-62-2	T	MG/L	0.00182			0.000991	0.000991	0.00100	Y	Yes	1	NA
Zinc	7440-66-6	T	MG/L	0.00343	J	RL	0.00322	0.00322	0.00500	Y	Yes	1	NA	
SW-846 7470A	Mercury	7439-97-6	T	MG/L		U		0.000101	0.000101	0.000200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L		U		0.715	0.715	1.00	N	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L		U		0.0263	0.0263	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L		U		0.380	0.380	1.00	N	Yes	1	NA

SECTION 3

SUPPORTING DOCUMENTATION FOR QUALIFIERS



INORGANIC ANALYSIS SUPPORT DOCUMENTATION

ESI project name: TVA WBF EI Implementation
 Sample Collection Dates: 9/6/19
 Job Number: 20198500.A000
 Project Manager: AJC
 Laboratory: TestAmerica- Pittsburgh

Reviewed by: DC
 Approved by: ER
 Completion Date: 10/2019

Applicable Sample No's (X) Refer to Table 1 in the Quality Assurance Review

Deliverable:	CLP (Full)	()	Sample No.	Lab Control No.
	Level IV (Full)	(X)	180-95332-1	
	Limited	()		
	Other:			

The following table indicates criteria that were examined, the identified problems, and support documentation attachments

	Criteria Examined in Detail				Problems Identified				Support Documentation Attachments			
	Check (√) if Yes or Footnote Letter for Comments Below				Check (√) if Yes or Footnote Letter for Comments Below				Check (√) if Yes or Footnote Letter for Comments Below			
	6020A	7470A/7471B	9056A	Gen Chem	6020A	7470A	9056A	Gen Chem	6020A	7470A	9056A	Gen Chem
Holding Times	X	X	X	X					X	X	X	X
Blank Analysis Results	X	X	X	X	X				X	X	X	X
Matrix Spike (Predigestion) Results	X	X	X		X		X		X	X	X	
Duplicate Analysis: () Field (X) Lab				X								X
Quantitation of Results	X	X	X	X					X	X	X	X
Detection Limit/Sensitivity	X	X	X	X					X	X	X	X
Initial Calibrations	X	X	X						X	X	X	
Continuing Calibrations	X	X	X	X					X	X	X	X
Laboratory Control Standard (LCS)	X	X	X	X					X	X	X	X
ICP Linear Range Analysis	X								X			
ICP Interference Checks												
ICP Serial Dilutions	X				X				X			
ICP Post-Digestion Spike	X								X			
GFAA Post Digestion Spikes												
GFAA Duplicate Injections												
ICP Multiple Exposures	X				X				X			
GFAA Standard Additions												
CRDL Standards	X	X	X						X	X	X	
Condition on Receipt	X	X	X	X					X	X	X	X
Percent Solids												
Others: ICP/MS Internal Standards	X				X				X			

Comments: _____

BLANK ANALYSIS RESULTS FOR INORGANIC PARAMETERS

Matrix (Aq., S.)	Blank Type						Blank Sample Number	Contaminant	Concentration (µg/L, mg/L, mg/kg)	Qualification limit (5×)
	Method									
	ICB	CCB	Prep.	Trip	Equip	Field				
Aq					X		EB01	antimony	0.00114	0.0057
								arsenic	0.000488	0.00244
								beryllium	0.000205	0.001025
								calcium	0.144	0.72
								chromium	0.00334	0.0167
								selenium	0.00235	0.01175
								vanadium	0.00332	0.0166
							EB02	fluoride	0.0276	0.138
								sulfate	0.576	2.88
								barium	0.00273	0.01365
								chromium	0.00265	0.01325
								vanadium	0.00155	0.00775
								zinc	0.00425	0.02125
							LB01	antimony	0.000663	0.003315
								arsenic	0.000347	0.001735
								chromium	0.00276	0.0138
								vanadium	0.00177	0.00885
								zinc	0.00366	0.0183
							LB02	barium	0.0044	0.022
								chromium	0.00297	0.01485
								vanadium	0.00176	0.0088
								zinc	0.00369	0.01845
Aq						X	FB03	antimony	0.000527	0.002635
								arsenic	0.000347	0.001735
								chromium	0.00274	0.0137
								vanadium	0.00182	0.0091
								zinc	0.00343	0.01715
Aq			X				MB 180-291964	beryllium	0.145	0.725
									0.576	2.88
Aq		X					CCBs	beryllium	0.2	1
								beryllium	0.344	1.72

Aq = Aqueous; S = Solid

Notes:

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

**Client Sample ID: WBF-BS-BG04-1.5/3.5-20190906 ~
WBF-BG-04**

Lab Sample ID: 180-95322-1

Date Collected: 09/06/19 08:41
Date Received: 09/07/19 09:45

**Matrix: Solid
Percent Solids: 77.5**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.5	4.83	mg/Kg	*		09/18/19 07:01	1
Fluoride <i>VR, M-</i>	ND		1.25	0.847	mg/Kg	*		09/18/19 07:01	1
Sulfate	21.8		12.5	8.46	mg/Kg	*		09/18/19 07:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>J, I, M-</i>	8.89		0.261	0.0808	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Arsenic <i>J, I</i>	12.7		0.130	0.0339	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Barium	119		1.30	0.167	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Beryllium	4.50	B	0.130	0.00977	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Boron	55.9		10.4	1.76	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Cadmium <i>J, I</i>	3.29		0.130	0.0222	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Calcium	9800		65.2	11.7	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Chromium	26.3		0.261	0.108	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Cobalt	12.4		0.0652	0.0108	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Copper	21.3		0.261	0.147	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Lead <i>J, I</i>	19.8		0.130	0.0456	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Lithium	24.5		0.652	0.360	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Molybdenum <i>J, I</i>	4.41		0.652	0.212	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Nickel	19.7		0.130	0.0795	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Selenium <i>J, I</i>	6.58		0.652	0.159	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Silver <i>J, I</i>	8.68		0.130	0.0352	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Thallium <i>J, I</i>	6.91	B	0.130	0.0326	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Vanadium	42.2		0.130	0.0834	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1
Zinc <i>J, SA</i>	73.2		0.652	0.435	mg/Kg	*	09/19/19 13:39	09/22/19 02:56	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<i>RL</i> 0.0214	J	0.0399	0.0173	mg/Kg	*	09/20/19 14:03	09/23/19 16:19	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.5		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	77.5		0.1	0.1	%			09/18/19 12:58	1
pH	5.6	<i>HF</i>	0.1	0.1	SU			09/26/19 11:15	1

Eurofins TestAmerica, Pittsburgh



Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

Client Sample ID: WBF-BS-BG04-6.5/8.5-20190906 ~ WBF-BG-04

Lab Sample ID: 180-95322-2

Date Collected: 09/06/19 08:55
Date Received: 09/07/19 09:45

**Matrix: Solid
Percent Solids: 82.9**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.9	4.62	mg/Kg	☆		09/18/19 07:16	1
Fluoride <i>VR, M-</i>	ND		1.19	0.810	mg/Kg	☆		09/18/19 07:16	1
Sulfate	<i>RL</i> 9.75	J	11.9	8.09	mg/Kg	☆		09/18/19 07:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>J, M-</i>	<i>RL</i> 0.166	J	0.244	0.0755	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Arsenic	5.85		0.122	0.0317	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Barium	121		1.22	0.156	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Beryllium	1.23	B	0.122	0.00914	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Boron	<i>RL</i> 2.47	J	9.74	1.64	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Cadmium	<i>RL</i> 0.0518	J	0.122	0.0207	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Calcium	343		60.9	10.9	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Chromium	23.2		0.244	0.101	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Cobalt	28.2		0.0609	0.0101	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Copper	19.5		0.244	0.138	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Lead <i>J, I</i>	19.2		0.122	0.0426	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Lithium	18.0		0.609	0.336	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Molybdenum	0.930		0.609	0.199	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Nickel	18.3		0.122	0.0743	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Selenium <i>J, Z Z</i>	0.760		0.609	0.149	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Silver	ND		0.122	0.0329	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Thallium <i>J, I</i>	0.390	B	0.122	0.0305	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Vanadium	35.5		0.122	0.0780	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1
Zinc <i>J, SD</i>	64.8		0.609	0.407	mg/Kg	☆	09/19/19 13:39	09/21/19 20:33	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<i>RL</i> 0.0247	J	0.0398	0.0172	mg/Kg	☆	09/20/19 14:03	09/23/19 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.1		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	82.9		0.1	0.1	%			09/18/19 12:58	1
pH	5.9	<i>IF</i>	0.1	0.1	SU			09/26/19 11:16	1



Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

Client Sample ID: WBF-BS-BG04-11.5/13.5-20190906 ~ WBF-BG-04

Lab Sample ID: 180-95322-3

Date Collected: 09/06/19 09:16
Date Received: 09/07/19 09:45

Matrix: Solid
Percent Solids: 79.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.5	4.87	mg/Kg	*		09/18/19 07:31	1
Fluoride <i>J, M-</i>	1.56		1.25	0.853	mg/Kg	*		09/18/19 07:31	1
Sulfate	<i>RL</i> 9.97	J	12.5	8.51	mg/Kg	*		09/18/19 07:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>J, M-</i>	<i>RL</i> 0.138	J	0.248	0.0768	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Arsenic	5.30		0.124	0.0322	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Barium	124		1.24	0.159	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Beryllium	1.21	B	0.124	0.00930	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Boron	<i>RL</i> 2.74	J	9.92	1.67	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Cadmium	<i>RL</i> 0.120	J	0.124	0.0211	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Calcium	645		62.0	11.1	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Chromium	22.1		0.248	0.103	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Cobalt	13.4		0.0620	0.0103	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Copper	19.3		0.248	0.140	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Lead	15.8		0.124	0.0434	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Lithium	18.4		0.620	0.342	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Molybdenum	0.855		0.620	0.202	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Nickel	19.8		0.124	0.0756	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Selenium	0.830		0.620	0.151	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Silver	ND		0.124	0.0335	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Thallium <i>V, B, L</i>	0.355	B	0.124	0.0310	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Vanadium	37.0		0.124	0.0793	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1
Zinc <i>J, SD</i>	64.6		0.620	0.414	mg/Kg	*	09/19/19 13:39	09/21/19 20:38	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<i>RL</i> 0.0337	J	0.0379	0.0164	mg/Kg	*	09/20/19 14:03	09/23/19 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20.9		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	79.1		0.1	0.1	%			09/18/19 12:58	1
pH	6.2	<i>HF</i>	0.1	0.1	SU			09/26/19 11:17	1

Eurofins TestAmerica, Pittsburgh



Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

**Client Sample ID: WBF-BS-BG04-16.5/18.5-20190906 ~
WBF-BG-04**

Lab Sample ID: 180-95322-4

Date Collected: 09/06/19 09:36
Date Received: 09/07/19 09:45

**Matrix: Solid
Percent Solids: 78.9**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.5	4.86	mg/Kg	*		09/18/19 07:46	1
Fluoride <i>J, M-</i>	1.65		1.25	0.852	mg/Kg	*		09/18/19 07:46	1
Sulfate	<i>RL</i> 11.7	J	12.5	8.51	mg/Kg	*		09/18/19 07:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>J, M-</i>	<i>RL</i> 0.124	J	0.248	0.0770	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Arsenic	4.63		0.124	0.0323	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Barium	115		1.24	0.159	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Beryllium	1.18	B	0.124	0.00931	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Boron	<i>RL</i> 1.97	J	9.94	1.68	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Cadmium	<i>RL</i> 0.0976	J	0.124	0.0211	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Calcium	749		62.1	11.1	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Chromium	23.8		0.248	0.103	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Cobalt	13.0		0.0621	0.0103	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Copper	18.6		0.248	0.140	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Lead	14.1		0.124	0.0435	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Lithium	17.6		0.621	0.343	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Molybdenum	0.854		0.621	0.202	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Nickel	19.4		0.124	0.0758	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Selenium	0.944		0.621	0.152	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Silver	ND		0.124	0.0335	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Thallium <i>J, BL</i>	0.329	B	0.124	0.0310	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Vanadium	38.0		0.124	0.0795	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1
Zinc <i>J, SO</i>	65.4		0.621	0.415	mg/Kg	*	09/19/19 13:39	09/21/19 20:43	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0356		0.0344	0.0149	mg/Kg	*	09/20/19 14:03	09/23/19 16:25	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.1		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	78.9		0.1	0.1	%			09/18/19 12:58	1
pH	6.4	<i>HF+</i>	0.1	0.1	SU			09/26/19 11:18	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

**Client Sample ID: WBF-BS-BG04-21.5/23.5-20190906 ~
WBF-BG-04**

Lab Sample ID: 180-95322-5

Date Collected: 09/06/19 10:07
Date Received: 09/07/19 09:45

**Matrix: Solid
Percent Solids: 75.7**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		13.0	5.04	mg/Kg	✱		09/18/19 08:01	1
Fluoride <i>J, M-</i>	2.19	F1	1.30	0.883	mg/Kg	✱		09/18/19 08:01	1
Sulfate	ND		13.0	8.82	mg/Kg	✱		09/18/19 08:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>J, M-</i>	<i>AL</i> 0.0975	J F1	0.257	0.0796	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Arsenic	3.53		0.128	0.0334	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Barium	98.8		1.28	0.164	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Beryllium	0.893	B	0.128	0.00962	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Boron	ND		10.3	1.73	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Cadmium	<i>AL</i> 0.0706	J	0.128	0.0218	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Calcium	771		64.2	11.5	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Chromium	21.6		0.257	0.107	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Cobalt	10.2		0.0642	0.0107	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Copper	15.2		0.257	0.145	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Lead	11.5		0.128	0.0449	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Lithium	15.3		0.642	0.354	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Molybdenum	0.832		0.642	0.209	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Nickel	15.1		0.128	0.0783	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Selenium	0.661		0.642	0.157	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Silver	ND		0.128	0.0346	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Thallium <i>U, BL</i>	0.321	B	0.128	0.0321	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Vanadium	30.6		0.128	0.0821	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1
Zinc <i>J, SO</i>	57.2		0.642	0.429	mg/Kg	✱	09/19/19 13:39	09/21/19 21:06	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<i>AL</i> 0.0270	J	0.0403	0.0174	mg/Kg	✱	09/20/19 14:03	09/23/19 16:26	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24.3		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	75.7		0.1	0.1	%			09/18/19 12:58	1
pH	6.8	<i>HP</i>	0.1	0.1	SU			09/26/19 11:19	1

Eurofins TestAmerica, Pittsburgh



Client Sample Results

Client: Environmental Standards Inc.
 Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

**Client Sample ID: WBF-BS-BG04-26.5/28.5-20190906 ~
 WBF-BG-04**

Lab Sample ID: 180-95322-6

Date Collected: 09/06/19 10:40
 Date Received: 09/07/19 09:45

**Matrix: Solid
 Percent Solids: 72.5**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		13.4	5.19	mg/Kg	*		09/18/19 09:16	1
Fluoride <i>J,M-</i>	2.35		1.34	0.910	mg/Kg	*		09/18/19 09:16	1
Sulfate	<i>RL</i> 11.3	J	13.4	9.08	mg/Kg	*		09/18/19 09:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>VJ,M-</i>	ND		0.271	0.0839	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Arsenic	2.66		0.135	0.0352	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Barium	83.9		1.35	0.173	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Beryllium	0.910	B	0.135	0.0101	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Boron	ND		10.8	1.83	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Cadmium	<i>RL</i> 0.0598	J	0.135	0.0230	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Calcium	759		67.7	12.1	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Chromium	21.2		0.271	0.112	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Cobalt	9.37		0.0677	0.0112	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Copper	13.5		0.271	0.153	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Lead	9.14		0.135	0.0474	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Lithium	13.2		0.677	0.373	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Molybdenum	<i>RL</i> 0.480	J	0.677	0.221	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Nickel	14.4		0.135	0.0825	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Selenium	<i>RL</i> 0.577	J	0.677	0.165	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Silver	ND		0.135	0.0365	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Thallium <i>v,bl</i>	0.279	B	0.135	0.0338	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Vanadium	30.5		0.135	0.0866	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1
Zinc <i>J,SD</i>	54.1		0.677	0.452	mg/Kg	*	09/19/19 13:39	09/21/19 20:47	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<i>RL</i> 0.0224	J	0.0342	0.0148	mg/Kg	*	09/20/19 14:03	09/23/19 16:29	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	27.5		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	72.5		0.1	0.1	%			09/18/19 12:58	1
pH	7.0	<i>HF</i>	0.1	0.1	SU			09/26/19 11:22	1



Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

Client Sample ID: WBF-BS-BG04-31.5/33.5-20190906 ~
WBF-BG-04

Lab Sample ID: 180-95322-7

Date Collected: 09/06/19 11:24
Date Received: 09/07/19 09:45

Matrix: Solid
Percent Solids: 86.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.4	4.42	mg/Kg	☼		09/18/19 09:30	1
Fluoride <i>V, M-</i>	ND		1.14	0.775	mg/Kg	☼		09/18/19 09:30	1
Sulfate	ND		11.4	7.74	mg/Kg	☼		09/18/19 09:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>V, M-</i>	ND		0.227	0.0702	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Arsenic	4.68		0.113	0.0294	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Barium	38.1		1.13	0.145	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Beryllium	0.296	B	0.113	0.00849	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Boron	ND		9.06	1.53	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Cadmium	<i>RL</i> 0.0227	J	0.113	0.0193	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Calcium	294		56.6	10.1	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Chromium	14.3		0.227	0.0940	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Cobalt	4.06		0.0566	0.00940	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Copper	4.09		0.227	0.128	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Lead	4.12		0.113	0.0396	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Lithium	2.93		0.566	0.313	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Molybdenum	0.572		0.566	0.185	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Nickel	5.84		0.113	0.0691	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Selenium	<i>RL</i> 0.184	J	0.566	0.138	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Silver	ND		0.113	0.0306	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Thallium <i>V, BL</i>	<i>RL</i> 0.109	J B	0.113	0.0283	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Vanadium	7.76		0.113	0.0725	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1
Zinc <i>J, SD</i>	18.5		0.566	0.378	mg/Kg	☼	09/19/19 13:39	09/21/19 20:52	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0336	0.0146	mg/Kg	☼	09/20/19 14:03	09/23/19 16:30	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.4		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	86.6		0.1	0.1	%			09/18/19 12:58	1
pH	7.0	<i>HF</i>	0.1	0.1	SU			09/26/19 11:23	1

Eurofins TestAmerica, Pittsburgh



Client Sample Results

Client: Environmental Standards Inc
 Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

**Client Sample ID: WBF-BS-BG04-0.0/0.5-20190906 ~
 WBF-BG-04**

Lab Sample ID: 180-95322-8

Date Collected: 09/06/19 12:24
 Date Received: 09/07/19 09:45

**Matrix: Solid
 Percent Solids: 84.3**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.8	4.56	mg/Kg	☆		09/18/19 09:45	1
Fluoride <i>VR, M</i>	ND		1.18	0.799	mg/Kg	☆		09/18/19 09:45	1
Sulfate	ND		11.8	7.98	mg/Kg	☆		09/18/19 09:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony <i>J, M</i>	<i>RL</i> 0.187	J	0.237	0.0735	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Arsenic	4.07		0.119	0.0308	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Barium	119		1.19	0.152	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Beryllium	1.27	B	0.119	0.00889	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Boron	<i>RL</i> 3.10	J	9.49	1.60	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Cadmium	0.119		0.119	0.0202	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Calcium	997		59.3	10.6	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Chromium	18.4		0.237	0.0984	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Cobalt	13.2		0.0593	0.00984	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Copper	11.8		0.237	0.134	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Lead <i>J, I</i>	18.2		0.119	0.0415	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Lithium	15.9		0.593	0.327	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Molybdenum	0.659		0.593	0.193	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Nickel	14.8		0.119	0.0723	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Selenium	1.28		0.593	0.145	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Silver	<i>RL</i> 0.0362	J	0.119	0.0320	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Thallium <i>J, I</i>	0.444	B	0.119	0.0296	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Vanadium	25.6		0.119	0.0759	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1
Zinc <i>J, SO</i>	57.6		0.593	0.396	mg/Kg	☆	09/19/19 13:39	09/21/19 21:30	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<i>RL</i> 0.0309	J	0.0356	0.0154	mg/Kg	☆	09/20/19 14:03	09/23/19 16:31	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.7		0.1	0.1	%			09/18/19 12:58	1
Percent Solids	84.3		0.1	0.1	%			09/18/19 12:58	1
pH	6.1	<i>MF</i>	0.1	0.1	SU			09/26/19 11:25	1

Eurofins TestAmerica, Pittsburgh



FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-95322-1

SDG No.:

Matrix: Solid (Soluble) Level: Low Lab File ID: 09-17-2019-77.d

Lab ID: 180-95322-5 MS ✓ Client ID: WBF-BS-BG04-21.5/23.5-20190906 ✓

75-125/-

COMPOUND	SPIKE	SAMPLE	MS	MS	QC	#
	ADDED (mg/Kg)	CONCENTRATION (mg/Kg)	CONCENTRATION (mg/Kg)	% REC	LIMITS REC	
Chloride	324	ND	320.0 ✓	99 ✓	80-120	
Fluoride	16.2	2.19	5.141 ✓	18	80-120	F1
Sulfate	324	ND	290.3	90 ✓	80-120	

UR, M-: 1, 2, 7, 8
J, M-: 3, 4, 5, 6

Column to be used to flag recovery and RPD values

FORM III EPA 9056A

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-95322-1
 SDG No.: _____
 Matrix: Solid (Soluble) Level: Low Lab File ID: 09-17-2019-78.d
 Lab ID: 180-95322-5 MSD Client ID: WBF-BS-BG04-21.5/23.5-20190906 ✓

20 75-125%

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD		QC LIMITS		#
			% REC	% RPD	RPD	REC	
Chloride	320	322.0	101 ✓	1	15	80-120	
Fluoride	16.0	5.168 ✓	19	1 ✓	15	80-120	F1
Sulfate	320	291.9 ✓	91 ✓	1 ✓	15	80-120	

URM-1, 2, 7, 8
LM-3, 4, 5, 6

Column to be used to flag recovery and RPD values
 FORM III EPA 9056A

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-95322-1

SDG No.:

Concentration Units: mg/Kg

Lab Sample ID: MB 180-291964/1-A

Instrument Code: M

Batch No.: 292270

CAS No.	Analyte	Concentration	C	Q	Method
7440-36-0	Antimony	ND			6020A
7440-38-2	Arsenic	ND			6020A
7440-39-3	Barium	ND			6020A
7440-41-7	Beryllium	0.01450	J		6020A
7440-42-8	Boron	ND			6020A
7440-43-9	Cadmium	ND			6020A
7440-70-2	Calcium	ND			6020A
7440-47-3	Chromium	ND			6020A
7440-48-4	Cobalt	ND			6020A
7440-50-8	Copper	ND			6020A
7439-92-1	Lead	ND			6020A
7439-93-2	Lithium	ND			6020A
7439-98-7	Molybdenum	ND			6020A
7440-02-0	Nickel	ND			6020A
7782-49-2	Selenium	ND			6020A
7440-22-4	Silver	ND			6020A
7440-28-0	Thallium	0.05760	J		6020A
7440-62-2	Vanadium	ND			6020A
7440-66-6	Zinc	ND			6020A

0.195 ug/L x 5 = 0.725 ug/L
all results > 5x, we qual

0.576 ug/L x 5 = 2.88
V², BL: 3-7

5A-IN
 MATRIX SPIKE SAMPLE RECOVERY
 METALS

Client ID: WBF-BS-BG04-21.5/23.5-20190906 ~

Lab ID: 180-95322-5 MS

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-95322-1

SDG No.:

Matrix: Solid

Concentration Units: mg/Kg

% Solids: 75.7

Analyte	SSR	Sample Result (SR)	Spike Added (SA)	%R	Control Limit %R	Q	Method
Antimony	21.66 ✓	0.0975 J	33.7	64	75-125	F1	EPA 6020A
Arsenic	120.1	3.53	135	86	75-125		EPA 6020A
Barium	213.9	98.8	135	85	75-125		EPA 6020A
Beryllium	66.63 ✓	0.893	67.4	97	75-125		EPA 6020A
Boron	157.0	ND	169	93 ✓	75-125		EPA 6020A
Cadmium	63.59	0.0706 J	67.4	94	75-125		EPA 6020A
Calcium	3658	771	3370	86	75-125		EPA 6020A
Chromium	81.35	21.6	67.4	89	75-125		EPA 6020A
Cobalt	72.53	10.2	67.4	92	75-125		EPA 6020A
Copper	78.33	15.2	67.4	94	75-125		EPA 6020A
Lead	79.30	11.5	67.4	101 ✓	75-125		EPA 6020A
Lithium	78.29 ✓	15.3	67.4	93	75-125		EPA 6020A
Molybdenum	61.19	0.832	67.4	90	75-125		EPA 6020A
Nickel	78.43	15.1	67.4	94	75-125		EPA 6020A
Selenium	109.1	0.661	135	80 ✓	75-125		EPA 6020A
Silver	32.52	ND	33.7	96	75-125		EPA 6020A
Thallium	131.5	0.321	135	97	75-125		EPA 6020A
Vanadium	90.70	30.6	67.4	89	75-125		EPA 6020A
Zinc	93.18	57.2	33.7	107	75-125		EPA 6020A
Mercury	0.2140 ✓	0.0270 J	0.207	91 ✓	80-120	75-125	EPA 7471B

SSR = Spiked Sample Result

J/UJ, M-: 1-8

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Note - Results and Reporting Limits have been adjusted for dry weight.

5A-IN
 MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
 METALS

Client ID: WBF-BS-BG04-21.5/23.5-20190906 ~

Lab ID: 180-95322-5 MSD

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-95322-1

SDG No.:

Matrix: Solid

Concentration Units: mg/Kg

% Solids: 75.7

Analyte	(SDR) C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Antimony	22.36 ✓	34.1	65	75-125	3 ✓	20	F1	EPA 6020A
Arsenic	118.4	136	84	75-125	1	20		EPA 6020A
Barium	209.6	136	81	75-125	2	20		EPA 6020A
Beryllium	67.31	68.1	97	75-125	1	20		EPA 6020A
Boron	160.9	170	94	75-125	2	20		EPA 6020A
Cadmium	63.03 ✓	68.1	92	75-125	1	20		EPA 6020A
Calcium	3644	3410	84 ✓	75-125	0 ✓	20		EPA 6020A
Chromium	78.79	68.1	84	75-125	3	20		EPA 6020A
Cobalt	69.40	68.1	87	75-125	4	20		EPA 6020A
Copper	77.08	68.1	91	75-125	2	20		EPA 6020A
Lead	78.17	68.1	98	75-125	1	20		EPA 6020A
Lithium	78.09	68.1	92	75-125	0	20		EPA 6020A
Molybdenum	60.73 ✓	68.1	88 ✓	75-125	1 ✓	20		EPA 6020A
Nickel	75.22	68.1	88	75-125	4	20		EPA 6020A
Selenium	108.5	136	79	75-125	1	20		EPA 6020A
Silver	32.31	34.1	95 ✓	75-125	1	20		EPA 6020A
Thallium	131.9	136	97	75-125	0	20		EPA 6020A
Vanadium	86.18	68.1	82	75-125	5	20		EPA 6020A
Zinc	88.61	34.1	92	75-125	5	20		EPA 6020A
Mercury	0.2055 ✓	0.176	101 ✓	80-120 ⁷⁵⁻¹²⁵	4 ✓	20		EPA 7471B

SDR = Sample Duplicate Result

J/US, M-: 1-8

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 180-95322-5

SDG No:

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No: 180-95322-1

Matrix: Solid

Concentration Units: mg/Kg

Analyte	Initial Sample		Serial Dilution		Difference %	Q	Method
	Result (I)	C	Result (S)	C			
Antimony	0.0975	J	ND		NC		EPA 6020A
Arsenic	3.53		3.793		7.5 ✓		EPA 6020A
Barium	98.8		102.2		3.4		EPA 6020A
Beryllium	0.893		0.9547		6.9 ✓		EPA 6020A
Boron	ND		ND		NC		EPA 6020A
Cadmium	0.0706	J	ND		NC		EPA 6020A
Calcium	771		838.6		8.7		EPA 6020A
Chromium	21.6		23.13 ✓		7.1		EPA 6020A
Cobalt	10.2		10.66		4.8 ✓		EPA 6020A
Copper	15.2		15.98		5.5		EPA 6020A
Lead	11.5		11.08 ✓		3.7		EPA 6020A
Lithium	15.3		15.99		NC		EPA 6020A
Molybdenum	0.832		ND		NC		EPA 6020A
Nickel	15.1		16.52		9.1		EPA 6020A
Selenium	0.661		ND		NC		EPA 6020A
Silver	ND		ND		NC		EPA 6020A
Thallium	0.321		0.3240	J	NC		EPA 6020A
Vanadium	30.6		32.01		4.5		EPA 6020A
Zinc	57.2		63.33 ✓		11 V		EPA 6020A

J,SD: 1-8

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

60-1257.

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-95322-1

SDG No.:

ICP-MS Instrument ID: M

Start Date: 09/21/2019 End Date: 09/22/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y-89	Q	Element Rh-103	Q	Element In	Q
STD1 180-292270/2 IC	17:20	100		100		100		100		100	
STD2 180-292270/3 IC	17:25	104		102		99		93		94	
STD3 180-292270/4 IC	17:30	104		96		90		85		84	
ICV 180-292270/5	17:35	103		97		96		89		88	
ICB 180-292270/6	17:39	102		104		106		106		106	
ICVL 180-292270/7	17:44	109		107		108		104		103	
ICSA 180-292270/8	17:49	84		86		77		68		67	
ICSAB 180-292270/9	17:54	79		82		77		72		73	
CCV 180-292270/10	17:59	82		84		88		86		88	
CCB1 180-292270/11	18:03	91		96		97		97		97	
CCV 180-292270/34	19:56	97		95		93		89		88	
CCB3 180-292270/35	20:01	97		101		98		100		97	
LCS 180-291964/2-A	20:20	111		87		78		79		76	
MB 180-291964/1-A	20:29	105		102		94		96		91	
180-95322-2	20:33	108		107		94		82		78	
180-95322-3	20:38	100		99		94		88		84	
180-95322-4	20:43	93		90		87		87		83	
180-95322-6	20:47	87		81		83		83		79	
180-95322-7	20:52	87		76		74		74		72	
CCV 180-292270/46	20:57	83		77		79		80		79	
CCB4 180-292270/47	21:02	90		86		84		82		79	
180-95322-5	21:06	94		94		79		79		76	
180-95322-5 SD	21:11	83		77		75		75		73	
180-95322-5 MS	21:16	82		74		72		72		70	
180-95322-5 MSD	21:21	89		82		75		75		72	
180-95322-5 PDS	21:25	91		83		75		75		71	
180-95322-8	21:30	93		86		74		74		70	
CCV 180-292270/58	21:54	77		67		64		64		62	
CCB5 180-292270/59	21:59	77		70		70		71		70	
CCV 180-292270/118	02:46	76		77		71		67		69	
CCB10	02:51	74		78		78		74		71	
180-292270/119											
180-95322-1	02:56	70		70		80		79		78	
CCVL 180-292270/122	03:15	82		81		80		79		78	
CCV 180-292270/123	03:19	79		79		78		67		68	
CCB11	03:24	74		80		80		77		76	
180-292270/124											

Y-89 not used for all samples, not guaranteed of any analytes, No qual

sample 1
J, I: As, Mo, Se, Ag
Sb, Cd

601257.

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-95322-1

SDG No.:

ICP-MS Instrument ID: M

Start Date: 09/21/2019 End Date: 09/22/2019

Lab Sample ID	Time	Internal Standards %RI For:						
		Element Tb	Q	Element Bi	Q	Element Q	Element Q	Element Q
STD1 180-292270/2 IC	17:20	100		100				
STD2 180-292270/3 IC	17:25	96		96				
STD3 180-292270/4 IC	17:30	87		66				
ICV 180-292270/5	17:35	90		62				
ICB 180-292270/6	17:39	102		105				
ICVL 180-292270/7	17:44	102		104				
ICSA 180-292270/8	17:49	77		48 ^{UL}				
ICSAB 180-292270/9	17:54	86		69				
CCV 180-292270/10	17:59	93		97				
CCB1 180-292270/11	18:03	100		100				
CCV 180-292270/34	19:56	94		77				
CCB3 180-292270/35	20:01	100		93				
LCS 180-291964/2-A	20:20	88		82				
MB 180-291964/1-A	20:29	97		85				
180-95322-2	20:33	99		51				
180-95322-3	20:38	111		79				
180-95322-4	20:43	109		84				
180-95322-6	20:47	100		82				
180-95322-7	20:52	87		79				
CCV 180-292270/46	20:57	87		85				
CCB4 180-292270/47	21:02	83		57 ^{QC}				
180-95322-5	21:06	98		69				
180-95322-5 SD	21:11	83		77				
180-95322-5 MS	21:16	93		76				
180-95322-5 MSD	21:21	95		78				
180-95322-5 PDS	21:25	95		79				
180-95322-8	21:30	95		56				
CCV 180-292270/58	21:54	72		56				
CCB5 180-292270/59	21:59	77		66				
CCV 180-292270/118	02:46	71		59 ^{QC}				
CCB10	02:51	70		55 ^{QC}				
180-292270/119								
180-95322-1	02:56	67		56				
ICVL 180-292270/122	03:15	75		75				
CCV 180-292270/123	03:19	67		45 ^{QC}				
CCB11	03:24	72		66				
180-292270/124								

✓
samples 1, 2, 8
J, I: Pb, Tl

180-95322-A-2-B 9/21/2019 8:33:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	7Li	9Be	10B	11B	13C	23Na	25Mg
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:33:52	109.561%	146.200	10.260	19.330	19.810	0.000	395.000	30850.000
2	20:34:00	108.878%	144.300	9.665	19.300	19.730	0.000	396.800	31060.000
3	20:34:08	105.805%	151.800	10.300	21.500	21.290	0.000	398.300	31050.000
x		108.081%	147.400	10.080	20.040	20.280	0.000	396.700	30990.000
σ		2.001%	3.907	0.356	1.261	0.881	0.000	1.628	116.600
%RSD		1.851	2.650	3.537	6.290	4.345	0.000	0.411	0.376
Run	Time	26Mg	27Al	28Si	37Cl	39K	43Ca	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:33:52	30820.000	165000.000	5465.000	0.000	17030.000	2982.000	2804.000	107.881%
2	20:34:00	31070.000	167000.000	5248.000	0.000	17150.000	2943.000	2825.000	106.584%
3	20:34:08	30870.000	166700.000	5306.000	0.000	17160.000	2895.000	2828.000	105.682%
x		30920.000	166200.000	5339.000	0.000	17110.000	2940.000	2819.000	106.715%
σ		133.200	1078.000	112.400	0.000	72.510	43.640	13.050	1.105%
%RSD		0.431	0.649	2.105	0.000	0.424	1.484	0.463	1.036
Run	Time	47Ti	51V	52Cr	55Mn	56Fe	57Fe	59Co	60Ni
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:33:52	6607.000	282.300	184.800	17860.000	266400.000	259200.000	226.900	147.700
2	20:34:00	6578.000	294.200	189.400	17910.000	274300.000	267200.000	233.700	150.800
3	20:34:08	6580.000	297.800	198.100	18000.000	276900.000	270900.000	234.800	151.800
x		6588.000	291.400	190.800	17920.000	272500.000	265800.000	231.800	150.100
σ		16.160	8.083	6.764	72.150	5488.000	6006.000	4.280	2.125
%RSD		0.245	2.774	3.546	0.403	2.014	2.260	1.846	1.415
Run	Time	63Cu	65Cu	66Zn	68Zn	75As	78Se	82Se	83Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:33:52	158.000	156.700	526.500	528.900	47.410	5.572	19.920	0.000
2	20:34:00	160.600	160.300	541.300	538.400	48.470	5.244	24.670	0.000
3	20:34:08	160.900	162.400	527.500	533.500	48.270	7.894	12.700	0.000
x		159.800	159.800	531.800	533.600	48.050	6.237	19.100	0.000
σ		1.588	2.920	8.252	4.765	0.564	1.445	6.031	0.000
%RSD		0.994	1.827	1.552	0.893	1.174	23.170	31.580	0.000
Run	Time	88Sr	89Y	95Mo	98Mo	103Rh	107Ag	109Ag	111Cd
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:33:52	58.420	0.000	7.659	7.917	78.941%	0.100	0.069	0.452
2	20:34:00	60.360	0.000	7.790	7.396	82.741%	0.082	0.114	0.335
3	20:34:08	61.690	0.000	7.647	7.603	85.172%	0.083	0.095	0.487
x		60.160	0.000	7.699	7.639	82.285%	0.088	0.093	0.425
σ		1.644	0.000	0.080	0.262	3.140%	0.010	0.022	0.080
%RSD		2.733	0.000	1.033	3.432	3.817	11.240	24.010	18.810
Run	Time	114Cd	115In	118Sn	121Sb	123Sb	135Ba	137Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:33:52	1.293	74.103%	44.130	1.431	1.201	1041.000	994.700	94.359%
2	20:34:00	1.285	78.031%	43.860	1.255	1.414	1043.000	993.100	98.573%
3	20:34:08	1.337	80.479%	45.310	1.403	1.243	1054.000	996.600	103.822%
x		1.305	77.538%	44.430	1.363	1.286	1046.000	994.800	98.918%
σ		0.028	3.217%	0.772	0.095	0.113	6.857	1.722	4.741%
%RSD		2.150	4.148	1.738	6.961	8.780	0.656	0.173	4.792
Run	Time	203Tl	205Tl	206Pb	207Pb	208Pb	209Bi		
		ppb	ppb	ppb	ppb	ppb	ppb		
1	20:33:52	3.600	3.158	165.500	153.000	157.200	46.028%		
2	20:34:00	3.654	3.236	163.400	152.300	157.200	50.865%		
3	20:34:08	3.507	3.201	159.700	153.500	157.600	55.875%		
x		3.587	3.198	162.900	152.900	157.300	50.923%		
σ		0.074	0.039	2.952	0.580	0.210	4.924%		
%RSD		2.064	1.222	1.813	0.379	0.134	9.669		

SECTION 4

CASE NARRATIVE AND CHAIN-OF-CUSTODY RECORD

Case Narrative

Client: Environmental Standards Inc.
Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

Job ID: 180-95322-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

**Job Narrative
180-95322-1**

Receipt

The samples were received on 9/7/2019 9:45 AM; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2° C and 3.1° C. ✓

GC Semi VOA

Method 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-291647 and analytical batch 180-291626 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.] J.M.

Metals

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 291964 were outside control limits for antimony. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.] J.M.

Method 6020A: The serial dilution performed for WBF-BS-BG04-21.5/23.5-20190906 ~ WBF-BG-04 (180-95322-5) associated with batch 291964 was outside control limits for zinc.] J.I.

General Chemistry

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

Sample Summary

Client: Environmental Standards Inc.
 Project/Site: WBF_BS_20190906_1A

Job ID: 180-95322-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-95322-1	WBF-BS-BG04-1.5/3.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 08:41 ✓	09/07/19 09:45	
180-95322-2	WBF-BS-BG04-6.5/8.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 08:55 ✓	09/07/19 09:45	
180-95322-3	WBF-BS-BG04-11.5/13.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 09:16 ✓	09/07/19 09:45	
180-95322-4	WBF-BS-BG04-16.5/18.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 09:36 ✓	09/07/19 09:45	
180-95322-5	WBF-BS-BG04-21.5/23.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 10:07 ✓	09/07/19 09:45	
180-95322-6	WBF-BS-BG04-26.5/28.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 10:40 ✓	09/07/19 09:45	
180-95322-7	WBF-BS-BG04-31.5/33.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 11:24 ✓	09/07/19 09:45	
180-95322-8	WBF-BS-BG04-0.0/0.5-20190906 ~ WBF-BG-04 ✓	Solid	09/06/19 12:24 ✓	09/07/19 09:45	
180-95322-9	WBF-BS-FB03-20190906 ~ WBF-BG-04 ✓	Water ✓	09/06/19 12:15 ✓	09/07/19 09:45	



Shipping and Receiving Documents

TVA Environmental Investigations

20190906



Tennessee Valley Authority

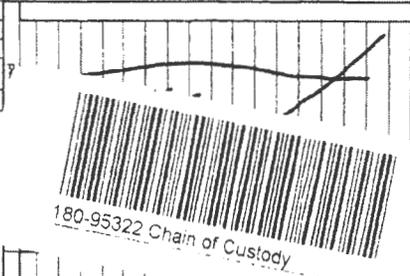
Chain-of-Custody / Analytical Request Document

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

COOLER No.:	1	of	2
COC No.:	WBF_BS 20190904 TA		
1 of 1 Pages			
Task Desc.:	WBF_BS		

Real
9/18/19

Required Ship to Lab:		Required Project Information:			Required Sampler Information:		
Lab Name	TestAmerica Pittsburgh	Site ID #:	Watts Bar Fossil Plant		Sampler:	Joe Ottolino	
Lab Address	301 Alpha Drive Pittsburgh, PA 15238	Project #:	175886050		Sampling Company:	Stantec	
Lab Manager Contact Information		Site Address	933 Old Ferry Road	City	Spring City	State, Zip	TN 37381
Lab PM:	Gail Laga	Site PM Name:	Roy Quinn		City/State	Nashville/TN	Phone: (615) 885-1144
Phone/Fax:	615-301-5741/815-728-3404	Phone/Fax:	423-751-3753		Sampling Team Number:		
Lab Email:		Site PM Email:			Send EDD/Hard Copy to:		



180-95322 Chain of Custody

Analysis Turnaround Time
 CALENDAR DAYS
 WORKING DAYS
 TAT different from Below _____
 24 Hours
 3 Business Days
 5 Business Days
 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth		MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	ANALYSIS	BACKGROUND SOIL	BACKGROUND SOIL BLANKS	BACKGROUND SOIL pH
			Depth Unit	Select Unit												
1	WBF-BS-BG04-1.5/3.5-20190906	WBF-BG-04	1.5	3.5	BS	G	N	9/6/2019	0841	2	NA		X	X		
2	WBF-BS-BG04-6.5/8.5-20190906	WBF-BG-04	6.5	8.5	BS	G	N	9/6/2019	0855	2	NA		X	X		
3	WBF-BS-BG04-11.5/13.5-20190906	WBF-BG-04	11.5	13.5	BS	G	N	9/6/2019	0916	2	NA		X	X		
4	WBF-BS-BG04-16.5/18.5-20190906	WBF-BG-04	16.5	18.5	BS	G	N	9/6/2019	0936	2	NA		X	X		
5	WBF-BS-BG04-21.5/23.5-20190906	WBF-BG-04	21.5	23.5	BS	G	N	9/6/2019	1007	2	NA	X	X	X		
6	WBF-BS-BG04-26.5/28.5-20190906	WBF-BG-04	26.5	28.5	BS	G	N	9/6/2019	1040	2	NA		X	X		
7	WBF-BS-BG04-31.5/33.5-20190906	WBF-BG-04	31.5	33.5	BS	G	N	9/6/2019	1124	2	NA		X	X		
8	WBF-BS-BG04-0.0/0.0-20190906	WBF-BG-04	0	0.5	BS	G	N	9/6/2019	1224	2	NA		X	X		
9	WBF-BS-F902-20190906	WBF-BG-04	--	--	AQ	G	FB	9/6/2019	1215	2	NA		X			

SO
9/6/2019

Additional Comments/Special Instructions:
 Additional volume collected should be used for MS/MSDs.
 BACKGROUND SOIL BLANKS: Anions unpreserved; Metals preserved w/ HNO3 to pH<2
 SO
9/6/2019

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Receipt Conditions							
Joe Ottolino / Stantec	9/8/2019	13:32	Greg Budd / Stantec	9/8/2019	13:32	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
Greg Budd / Stantec	9/6/2019	15:00	Joe Ottolino	9/17/19	9:45	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No						
SHIPPING METHOD:						SAMPLER NAME AND SIGNATURE:							
Fedex	SO		Joe Ottolino	9/16/2019		Temperature in °C	Sample on Ice?	Sample Intact?	Top Blank?				

Net: 10.00 LBS
 Dep: 0.00
 Wgt: 10.00 LBS
 SPECIAL: 0.00
 HANDLING: 0.00
 TOTAL: 0.00

Net: 10.00 LBS
 Dep: 0.00
 Wgt: 10.00 LBS
 SPECIAL: 0.00
 HANDLING: 0.00
 TOTAL: 0.00

Sves: PRIORITY OVERNIGHT Master 1155 5316 0001
 TRACK: 1155 5316 0667

Sves: PRIORITY OVERNIGHT Master 1155 5316 0001
 TRACK: 1155 5316 0034



Tennessee Valley Authority

TVA Environmental Investigations

20190906

COOLER No.:	2	of	2
CCC No.:	WBF_BS 20190904 TA		
	1 of 1 Pages		
Task Desc:	WBF_BS		

Rec'd
9/12/19

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information:	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Watts Bar Fossil Plant	Sampler:	Joe Ottolino
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238	Project #:	17568050	Sampling Company:	Stanlec
Lab Manager Contact Information		Site Address:	833 Old Ferry Road	Address:	601 Greaseme Park Suite 22
Lab PM:	Gail Laga	City:	Spring City State, Zip: TN 37381	City/State:	Nashville/TN Phone: (615) 885-1144
Phone/Fax:	815-301-5741/615-728-3404	Site PM Name:	Roy Quinn	Sampling Team Number:	1
Lab Email:	Gail.Laga@testamericapitt.com	Phone/Fax:	423-751-3753	Send EDD/Hard Copy to:	WBF_BS@tva.com
		Site PM Email:	roy.quinn@tva.com		

Analysis Turnaround Time

CALENDAR DAYS WORKING DAYS

TAT if different from Below _____

- 24 Hours
- 3 Business Days
- 5 Business Days
- 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth		MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis	Preserve
			Start Depth	End Depth										
1	WBF-BS-BG04-1.5/3.5-20190906	WBF-BG-04	1.5	3.5	BS	G	N	9/6/2019	0841	2	NA		X	X
2	WBF-BS-BG04-5.5/8.5-20190906	WBF-BG-04	6.5	8.5	BS	G	N	9/6/2019	0855	2	NA		X	X
3	WBF-BS-BG04-11.5/13.5-20190906	WBF-BG-04	11.5	13.5	BS	G	N	9/6/2019	0916	2	NA		X	X
4	WBF-BS-BG04-16.5/18.5-20190906	WBF-BG-04	16.5	18.5	BS	G	N	9/6/2019	0936	2	NA		X	X
5	WBF-BS-BG04-21.5/23.5-20190906	WBF-BG-04	21.5	23.5	BS	G	N	9/6/2019	1007	2	NA	X	X	X
6	WBF-BS-BG04-26.5/28.5-20190906	WBF-BG-04	26.5	28.5	BS	G	N	9/6/2019	1040	2	NA		X	X
7	WBF-BS-BG04-31.5/33.5-20190906	WBF-BG-04	31.5	33.5	BS	G	N	9/6/2019	1124	2	NA		X	X
8	WBF-BS-BG04-0.0/0.5-20190906	WBF-BG-04	0	0.5	BS	G	N	9/6/2019	1224	2	NA		X	X
9	WBF-BS-FB03-20190906	WBF-BG-04	--	--	AQ	G	FB	9/6/2019	1215	2	NA		X	

Filtered														
None														
Background														
Background, pH														

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

BACKGROUNDSOIL_BLANKS: Anions unpreserved; Metals preserved w/ HNO3 to pH<2

~~JO
9/6/2019~~

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Receipt Conditions							
Joe Ottolino / Stanlec	9/8/2019	13:32	Graig Budd / Stanlec	9/8/2019	13:32	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
Graig Budd / Stanlec	9/8/2019	16:00	<i>Graig Budd</i>	9/12/19	9:15	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input checked="" type="checkbox"/> No			
						<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
						<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
SHIPPING METHOD			SAMPLER NAME AND SIGNATURE			Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?				
Fedex			Joe Ottolino										

Page 972 of 975

TVA Environmental Investigations



Tennessee Valley Authority

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	2
COC No.:	WBF_BS 20190904 1A		
	1 of 1 Pages		
Task Desc:	WBF_BS		

Required Ship to Lab:		Required Project Information:			Required Sampler Information:		
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Watts Bar Fossil Plant		Sampler:	Joe Ottolino	
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238	Project #:	175668050		Sampling Company:	Stantec	
Lab Manager Contact Information		Site Address:	933 Old Ferry Road		Address:	601 Grassmere Park Suite 22	
Lab PM:	Gail Lage	City:	Spring City	State, Zip:	TN 37381	City/State:	Nashville/TN
Phone/Fax:	615-301-5741/615-726-3404	Site PM Name:	Roy Quinn		Phone:	(615) 885-1144	
Lab Email:	Gail.Lage@testamericainc.com	Phone/Fax:	423-751-3753		Sampling Team Number:	1	
		Site PM Email:	rquinn@tva.gov		Send EDD/Hard Copy to:	tva_deliveryables@envsld.com	

Analysis Turnaround Time

CALENDAR DAYS WORKING DAYS

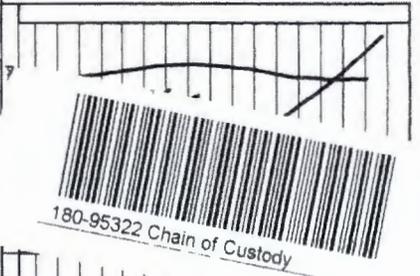
TAT if different from Below _____

24 Hours

3 Business Days

5 Business Days

10 Business Days



ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth		MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	ANALYSIS	BACKGROUND SOIL	BACKGROUND SOIL BLANKS	BACKGROUND SOIL pH
			Start Depth	End Depth												
1	WBF-BS-BG04-1.5/3.5-20190906	WBF-BG-04	1.5	3.5	BS	G	N	9/6/2019	0841	2	NA	<input type="checkbox"/>	X	X		
2	WBF-BS-BG04-6.5/8.5-20190906	WBF-BG-04	6.5	8.5	BS	G	N	9/6/2019	0855	2	NA	<input type="checkbox"/>	X	X		
3	WBF-BS-BG04-11.5/13.5-20190906	WBF-BG-04	11.5	13.5	BS	G	N	9/6/2019	0916	2	NA	<input type="checkbox"/>	X	X		
4	WBF-BS-BG04-16.5/18.5-20190906	WBF-BG-04	16.5	18.5	BS	G	N	9/6/2019	0936	2	NA	<input type="checkbox"/>	X	X		
5	WBF-BS-BG04-21.5/23.5-20190906	WBF-BG-04	21.5	23.5	BS	G	N	9/6/2019	1007	2	NA	<input checked="" type="checkbox"/>	X	X		
6	WBF-BS-BG04-26.5/28.5-20190906	WBF-BG-04	26.5	28.5	BS	G	N	9/6/2019	1040	2	NA	<input type="checkbox"/>	X	X		
7	WBF-BS-BG04-31.5/33.5-20190906	WBF-BG-04	31.5	33.5	BS	G	N	9/6/2019	1124	2	NA	<input type="checkbox"/>	X	X		
8	WBF-BS-BG04-0.0/0.5-20190906	WBF-BG-04	0	0.5	BS	G	N	9/6/2019	1224	2	NA	<input type="checkbox"/>	X	X		
9	WBF-BS-FB03-20190906	WBF-BG-04	--	--	AQ	G	FB	9/6/2019	1215	2	NA	<input type="checkbox"/>	X			

Additional Comments/Special Instructions: Additional volume collected should be used for MS/MSDs. BACKGROUND SOIL BLANKS: Anions unpreserved; Metals preserved w/ HNO3 to pH<2 <u>30</u> <u>9/6/2019</u>	RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	Sample Receipt Conditions							
	Joe Ottolino / Stantec		9/6/2019	13:32	Greg Budd / Stantec		9/6/2019	13:32	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
	Greg Budd / Stantec		9/6/2019	18:00	<u>Greg Budd</u>		9/7/19	9:45	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
	<u>30</u>				<u>9/6/2019</u>				<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
SHIPPING METHOD:		Fedex		SAMPLER NAME AND SIGNATURE		Joe Ottolino		Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?					
<u>30</u>		<u>9/6/2019</u>		<u>30</u>		<u>9/6/2019</u>										

Dep:	Wgt: 10.00 LBS	SPECIAL:	0.00	Dep:	Wgt: 10.00 LBS	SPECIAL:	0.00
DV:	0.00	HANDLING:	0.00	DV:	0.00	HANDLING:	0.00
		TOTAL:	0.00			TOTAL:	0.00

Svc: PRIORITY OVERNIGHT Master 1155 5316 0001
TRACK: 1155 5316 0067

Svc: PRIORITY OVERNIGHT Master 1155 5316 0001
TRACK: 1155 5316 0034

TVA Environmental Investigations



Tennessee Valley Authority

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	2
COC No:	WBF_BS 20190904 1A		
	1 of 1 Pages		
Task Desc:	WBF_BS		

Required Ship to Lab:		Required Project Information:		Required Sampler Information:	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Watts Bar Fossil Plant	Sampler:	Joe Ottolino
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238	Project #:	17508050	Sampling Company:	Stantec
Lab Manager Contact Information		Site Address:	933 Old Ferry Road	Address:	601 Grassmere Park Suite 22
Lab PM:	Gail Laga	City:	Spring City	City/State:	Nashville/TN
Phone/Fax:	615-301-5741/615-726-3404	State, Zip:	TN 37381	Phone:	(615) 685-1144
Lab Email:	Gail.Laga@testamericainc.com	Site PM Name:	Roy Quinn	Sampling Team Number:	1
		Phone/Fax:	423-751-3753	Send EDD/Hard Copy to:	tva_investigations@stantec.com
		Site PM Email:	rquinn@tva.gov		

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 TAT if different from Below _____
 24 Hours
 3 Business Days
 5 Business Days
 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth		MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	ANALYSIS	PRESERVE	FILTERED
			Start Depth Unit	End Depth Unit											
1	WBF-BS-BG04-1.5/3.5-20190906	WBF-BG-04	1.5	3.5	BS	G	N	9/6/2019	0841	2	NA				
2	WBF-BS-BG04-6.5/8.5-20190906	WBF-BG-04	6.5	8.5	BS	G	N	9/6/2019	0855	2	NA				
3	WBF-BS-BG04-11.5/13.5-20190906	WBF-BG-04	11.5	13.5	BS	G	N	9/6/2019	0916	2	NA				
4	WBF-BS-BG04-16.5/18.5-20190906	WBF-BG-04	16.5	18.5	BS	G	N	9/6/2019	0936	2	NA				
5	WBF-BS-BG04-21.5/23.5-20190906	WBF-BG-04	21.5	23.5	BS	G	N	9/6/2019	1007	2	NA	X			
6	WBF-BS-BG04-26.5/28.5-20190906	WBF-BG-04	26.5	28.5	BS	G	N	9/6/2019	1040	2	NA				
7	WBF-BS-BG04-31.5/33.5-20190906	WBF-BG-04	31.5	33.5	BS	G	N	9/6/2019	1124	2	NA				
8	WBF-BS-BG04-0.0/0.5-20190906	WBF-BG-04	0	0.5	BS	G	N	9/6/2019	1224	2	NA				
9	WBF-BS-FB03-20190906	WBF-BG-04	-	-	AQ	G	FB	9/6/2019	1215	2	NA				

Filtered	N	N	N	N
Preserve	None	None	None	None
Analysis	BACKGROUNDSOIL	BACKGROUNDSOIL	BACKGROUNDSOIL	BACKGROUNDSOIL_pH

Handwritten notes: SO, 2019, 9/6/2019

Additional Comments/Special Instructions:
 Additional volume collected should be used for MS/MSDs.
 BACKGROUNDSOIL_BLANKS: Anions unpreserved; Metals preserved w/ HNO3 to pH<2
SO
9/6/2019

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Joe Ottolino / Stantec	9/6/2019	13:32	Greg Budd / Stantec	9/6/2019	13:32
Greg Budd / Stantec	9/6/2019	15:00	<i>Signature</i>	9/7/19	9:15
<i>SO</i>		<i>9/6/2019</i>			
SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE				
Fedex	Joe Ottolino <i>Signature</i>				
<i>SO</i>	<i>9/6/2019</i>				

Sample Receipt Conditions			
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Yes			
<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No

Temperature in °C
 Sample on Ice?
 Sample Intact?
 Trip Blank?

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-95322-1

Login Number: 95322
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	