ENVIRONMENTAL STANDARDS
Setting the Standards for Innovative Environmental Solutions

Data Validation Report
Tennessee Valley Authority
John Sevier Fossil Plant
Environmental Investigation Plan
Surface Stream Samples
Chain-of-Custody Number: JSF_STR_20190206_1A

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the 10 aqueous samples and three aqueous blanks collected on February 6, 2019, at the Tennessee Valley Authority (TVA) John Sevier Fossil Plant facility. These samples were collectively analyzed by TestAmerica Laboratories, Inc. (TestAmerica), of Pittsburgh, Pennsylvania, for total and dissolved metals by SW-846 Method 6020A; for total and dissolved mercury by SW-846 Method 7470A; for anions (specifically, chloride, fluoride, and sulfate) by SW-846 Method 9056A; for total dissolved solids by Standard Method (SM) 2540C; for total suspended solids by SM 2540D; and for hardness by SM 2340B.

This review was performed in accordance with the Environmental Investigation Plan for the Tennessee Valley Authority John Sevier Fossil Plant Environmental Investigation (JSF EIP, Revision 3, October 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 Standard 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 and Standard 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 TestAmerica Job Number 180-86537-1.

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

Sample Identification	Laboratory Sample Identification	Job Number	Matrix	Date Sample Collected	Parameter(s) Examined
JSF-STR-FB01-20190206 (Field Blank)	180-86537-1	180-86537-1	Aq	2/6/19	M, Hg, H, A, TDS, TSS
JSF-STR-EB01-20190206 (Equipment Blank)	180-86537-2	180-86537-1	Aq	2/6/19	M, Hg, H, A, TDS, TSS
JSF-STR-FLB01-20190206 (Filter Blank)	180-86537-3	180-86537-1	Aq	2/6/19	M^1, Hg^1
JSF-STR-HR07-CC-SUR-20190206	180-86537-4	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR07-LB-SUR-20190206	180-86537-5	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR07-RB-SUR-20190206	180-86537-6	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR08-CC-SUR-20190206	180-86537-7	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR08-LB-SUR-20190206	180-86537-8	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR08-RB-SUR-20190206	180-86537-9	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR09-CC-SUR-20190206	180-86537-10	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR09-RB-SUR-20190206	180-86537-11	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-HR09-LB-SUR-20190206	180-86537-12	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS
JSF-STR-DUP01-20190206 (Field Duplicate of JSF-STR-HR09-CC-SUR-20190206)	180-86537-13	180-86537-1	Aq	2/6/19	M, M^1, Hg, Hg^1, H, A, TDS, TSS

<u>Parameters Examined</u>

M - Total Metals by SW-846 Method 6020A.
M^1 - Dissolved Metals by SW-846 Method 6020A.
Hg - Total Mercury by SW-846 Method 7470A.
Hg^1 - Dissolved Mercury by SW-846 Method 7470A.
H - Hardness by SM 2340B.
A - Anions (specifically, chloride, fluoride, and sulfate) by SW-846 Method 9056A.
TDS - Total dissolved solids by SM 2540C.
TSS - Total suspended solids by SM 2540D.
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 and Field Duplicate Results	Analytical Sequence
Quantitation of Positive Results	Total vs. Dissolved Results Comparison

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	Sample(s)	Validation Qualifier(s)	Reason(s) for Qualification
total vanadium	180-86537-1	All samples except JSF-STR-FB01-20190206, JSF-STR-EB01-20190206, and JSF-STR-FLB01-20190206	U*	BE, BF
dissolved vanadium	180-86537-1	All samples except JSF-STR-FB01-20190206, JSF-STR-EB01-20190206, and JSF-STR-FLB01-20190206	U*	BF
dissolved lead	180-86537-1	JSF-STR-HR09-LB-SUR-20190206	U*	BF
dissolved nickel	180-86537-1	JSF-STR-HR09-CC-SUR-20190206, JSF-STR-HR09-RB-SUR-20190206, and JSF-STR-HR09-LB-SUR-20190206	U*	BF
dissolved iron	180-86537-1	JSF-STR-HR07-CC-SUR-20190206, JSF-STR-HR07-LB-SUR-20190206, JSF-STR-HR07-RB-SUR-20190206, JSF-STR-HR08-CC-SUR-20190206, and JSF-STR-HR08-LB-SUR-20190206	U*	BL
total boron	180-86537-1	JSF-STR-HR09-RB-SUR-20190206 and JSF-STR-HR09-LB-SUR-20190206	U*	BL
dissolved boron	180-86537-1	JSF-STR-HR09-RB-SUR-20190206	U*	BL

Analyte(s)	Job Number	Sample(s)	Validation Qualifier(s)	Reason(s) for Qualification
dissolved molybdenum	180-86537-1	JSF-STR-HR08-RB-SUR-20190206	U*	BL
total molybdenum	180-86537-1	JSF-STR-HR07-CC-SUR-20190206	J (unless otherwise flagged "U*")	P+
dissolved molybdenum	180-86537-1	JSF-STR-HR08-RB-SUR-20190206	J (unless otherwise flagged "U*")	P+
total iron	180-86537-1	JSF-STR-HR07-CC-SUR-20190206, JSF-STR-HR07-LB-SUR-20190206, JSF-STR-HR07-RB-SUR-20190206, JSF-STR-HR08-CC-SUR-20190206, JSF-STR-HR08-LB-SUR-20190206, and JSF-STR-HR08-RB-SUR-20190206	J/UJ	M-, MP
total vanadium	180-86537-1	JSF-STR-HR07-CC-SUR-20190206, JSF-STR-HR07-LB-SUR-20190206, JSF-STR-HR07-RB-SUR-20190206, JSF-STR-HR08-CC-SUR-20190206, JSF-STR-HR08-LB-SUR-20190206 and JSF-STR-HR08-RB-SUR-20190206	J (unless otherwise flagged "U*")	M-
dissolved iron	180-86537-1	JSF-STR-HR08-RB-SUR-20190206	J	ZZ
total lithium, total beryllium, and total boron	180-86537-1	JSF-STR-FB01-20190206	UJ	I
dissolved lithium, dissolved beryllium, and dissolved boron	180-86537-1	JSF-STR-HR07-LB-SUR-20190206 and JSF-STR-HR08-RB-SUR-20190206	UJ	I
total magnesium, total calcium, and total vanadium	180-86537-1	JSF-STR-FB01-20190206, JSF-STR-EB01-20190206, JSF-STR-HR07-CC-SUR-20190206, JSF-STR-HR07-LB-SUR-20190206, JSF-STR-HR07-RB-SUR-20190206, JSF-STR-HR08-CC-SUR-20190206, and JSF-STR-HR08-LB-SUR-20190206	J/UJ (unless otherwise flagged "U*")	I
dissolved magnesium, dissolved calcium, and dissolved vanadium	180-86537-1	JSF-STR-FLB01-20190206, JSF-STR-HR07-CC-SUR-20190206, JSF-STR-HR07-LB-SUR-20190206, JSF-STR-HR07-RB-SUR-20190206, JSF-STR-HR08-CC-SUR-20190206, JSF-STR-HR08-LB-SUR-20190206, and JSF-STR-HR08-RB-SUR-20190206	J/UJ (unless otherwise flagged "U*")	I

Analyte(s)	Job Number	Sample(s)	Validation Qualifier(s)	Reason(s) for Qualification
total molybdenum and total silver	180-86537-1	JSF-STR-FB01-20190206, JSF-STR-EB01-20190206, JSF-STR-HR07-LB-SUR-20190206, JSF-STR-HR07-RB-SUR-20190206, JSF-STR-HR08-CC-SUR-20190206, and JSF-STR-HR08-LB-SUR-20190206	UJ	I
dissolved molybdenum and dissolved silver	180-86537-1	JSF-STR-HR07-CC-SUR-20190206, JSF-STR-HR07-LB-SUR-20190206, JSF-STR-HR08-LB-SUR-20190206, and JSF-STR-HR08-RB-SUR-20190206	J/UJ (unless otherwise flagged "U*")	I
total and dissolved magnesium	180-86537-1	JSF-STR-HR07-RB-SUR-20190206 and JSF-STR-HR08-CC-SUR-20190206	J	FG

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: Caroline M. Rowshan, Quality Assurance Chemist
Review reviewed by: Amanda J. Cover, Senior Quality Assurance 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: 3/26/19

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.

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-1
Sys Sample Code	JSF-STR-FB01-20190206
Sample Name	JSF-STR-FB01-20190206
Sample Date	2/6/2019 12:00:00 PM
Location	
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L		U		0.0218	0.0218	0.670	N	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L		U		10.0	10.0	10.0	N	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L		U		0.500	0.500	0.500	N	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	UG/L		U		0.323	0.323	1.00	N	Yes	1	NA
	Barium	7440-39-3	T	UG/L	4.81	J	RL	1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	T	UG/L		UJ	I	0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	T	UG/L		UJ	I	30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	T	UG/L		UJ	I	116	116	500	N	Yes	1	NA
	Chromium	7440-47-3	T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	UG/L		U		0.0750	0.0750	0.500	N	Yes	1	NA
	Copper	7440-50-8	T	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
	Iron	7439-89-6	T	UG/L		U		14.1	14.1	50.0	N	Yes	1	NA
	Lead	7439-92-1	T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Lithium	7439-93-2	T	UG/L		UJ	I	3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	T	UG/L		UJ	I	82.7	82.7	500	N	Yes	1	NA
	Manganese	7439-96-5	T	UG/L		U		1.35	1.35	5.00	N	Yes	1	NA
	Molybdenum	7439-98-7	T	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	T	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	T	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	T	UG/L	2.18	J	I	0.899	0.899	1.00	Y	Yes	1	NA
	Zinc	7440-66-6	T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	UG/L		U		0.101	0.101	0.200	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

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-10
Sys Sample Code	JSF-STR-HR09-CC-SUR-20190206
Sample Name	JSF-STR-HR09-CC-SUR-20190206
Sample Date	2/6/2019 3:05:00 PM
Location	JSF-HR09
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	112			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	150			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	6.60			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.397	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.440	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	32.0			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	33.0			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	30300			116	116	500	Y	Yes	1	NA
			T	UG/L	31200			116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.575			0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.848			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L	0.801	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
			T	UG/L	1.30	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L	18.6	J	RL	14.1	14.1	50.0	Y	Yes	1	NA
			T	UG/L	250			14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.305	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L	3.31	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
			T	UG/L	3.61	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	8250			82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	8380			82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	8.26			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-10
Sys Sample Code	JSF-STR-HR09-CC-SUR-20190206
Sample Name	JSF-STR-HR09-CC-SUR-20190206
Sample Date	2/6/2019 3:05:00 PM
Location	JSF-HR09
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	23.1			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U*	BF	0.331	0.331	1.00	N	Yes	1	NA
			T	UG/L	0.515	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF	1.03	1.03	1.03	N	Yes	1	NA
			T	UG/L		U*	BE,BF	1.19	1.19	1.19	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	12.4			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0828	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	14.0			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-11
Sys Sample Code	JSF-STR-HR09-RB-SUR-20190206
Sample Name	JSF-STR-HR09-RB-SUR-20190206
Sample Date	2/6/2019 3:30:00 PM
Location	JSF-HR09
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	107			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	180			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	9.60			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L	0.446	J	RL	0.378	0.378	2.00	Y	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.454	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.543	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	31.1			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	32.3			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U*	BL	47.5	47.5	80.0	N	Yes	1	NA
			T	UG/L		U*	BL	200	200	200	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	29700			116	116	500	Y	Yes	1	NA
			T	UG/L	29200			116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L	1.61	J	RL	1.53	1.53	2.00	Y	Yes	1	NA
			T	UG/L	2.17			1.53	1.53	2.00	Y	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.594			0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.867			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L	0.901	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
			T	UG/L	1.41	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L	18.8	J	RL	14.1	14.1	50.0	Y	Yes	1	NA
			T	UG/L	312			14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.409	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L	3.74	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
			T	UG/L	4.94	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	8380			82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	8290			82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	12.7			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-11
Sys Sample Code	JSF-STR-HR09-RB-SUR-20190206
Sample Name	JSF-STR-HR09-RB-SUR-20190206
Sample Date	2/6/2019 3:30:00 PM
Location	JSF-HR09
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	32.9			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U*	BF	0.363	0.363	1.00	N	Yes	1	NA
			T	UG/L	0.562	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF	1.56	1.56	1.56	N	Yes	1	NA
			T	UG/L		U*	BE,BF	1.85	1.85	1.85	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L	3.24	J	RL	3.22	3.22	5.00	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	12.6			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0736	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	13.6			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-12
Sys Sample Code	JSF-STR-HR09-LB-SUR-20190206
Sample Name	JSF-STR-HR09-LB-SUR-20190206
Sample Date	2/6/2019 3:55:00 PM
Location	JSF-HR09
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	111			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	144			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	8.20			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L	0.455	J	RL	0.378	0.378	2.00	Y	Yes	1	NA
			T	UG/L	0.379	J	RL	0.378	0.378	2.00	Y	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.448	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.504	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	32.7			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	34.1			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U*	BL	33.2	33.2	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	29600			116	116	500	Y	Yes	1	NA
			T	UG/L	30500			116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L	1.91	J	RL	1.53	1.53	2.00	Y	Yes	1	NA
			T	UG/L	1.57	J	RL	1.53	1.53	2.00	Y	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.615			0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.948			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L	0.855	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
			T	UG/L	1.47	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L	20.2	J	RL	14.1	14.1	50.0	Y	Yes	1	NA
			T	UG/L	327			14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U*	BF	0.235	0.235	1.00	N	Yes	1	NA
			T	UG/L	0.350	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L	3.65	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
			T	UG/L	3.67	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	8370			82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	8460			82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	10.4			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-12
Sys Sample Code	JSF-STR-HR09-LB-SUR-20190206
Sample Name	JSF-STR-HR09-LB-SUR-20190206
Sample Date	2/6/2019 3:55:00 PM
Location	JSF-HR09
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	26.8			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U*	BF	0.376	0.376	1.00	N	Yes	1	NA
			T	UG/L	0.576	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF	1.48	1.48	1.48	N	Yes	1	NA
			T	UG/L		U*	BE,BF	1.57	1.57	1.57	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	13.4			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0653	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	15.7			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-13
Sys Sample Code	JSF-STR-DUP01-20190206
Sample Name	JSF-STR-DUP01-20190206
Sample Date	2/6/2019 12:00:00 AM
Location	
Sample Type	FD
Parent Sample	JSF-STR-HR09-CC-SUR-20190206

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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	102			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	133			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	6.30			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.427	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.457	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	30.4			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	30.9			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	28900			116	116	500	Y	Yes	1	NA
			T	UG/L	27800			116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L	1.56	J	RL	1.53	1.53	2.00	Y	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.561			0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.806			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L	0.819	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
			T	UG/L	1.17	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L	16.4	J	RL	14.1	14.1	50.0	Y	Yes	1	NA
			T	UG/L	252			14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.261	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L	3.46	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
			T	UG/L	3.22	J	RL	3.14	3.14	5.00	Y	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	8200			82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	7920			82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	8.08			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-13
Sys Sample Code	JSF-STR-DUP01-20190206
Sample Name	JSF-STR-DUP01-20190206
Sample Date	2/6/2019 12:00:00 AM
Location	
Sample Type	FD
Parent Sample	JSF-STR-HR09-CC-SUR-20190206

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	Manganese	7439-96-5	T	UG/L	21.9			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
			T	UG/L	0.488	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF	1.06	1.06	1.06	N	Yes	1	NA
			T	UG/L		U*	BE,BF	1.42	1.42	1.42	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	12.2			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0747	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	13.1			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-2
Sys Sample Code	JSF-STR-EB01-20190206
Sample Name	JSF-STR-EB01-20190206
Sample Date	2/6/2019 12:15:00 PM
Location	
Sample Type	EB
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L		U		0.0218	0.0218	0.670	N	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L		U		10.0	10.0	10.0	N	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L		U		0.500	0.500	0.500	N	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	UG/L		U		0.323	0.323	1.00	N	Yes	1	NA
	Barium	7440-39-3	T	UG/L		U		1.49	1.49	10.0	N	Yes	1	NA
	Beryllium	7440-41-7	T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	T	UG/L		UJ	I	116	116	500	N	Yes	1	NA
	Chromium	7440-47-3	T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	UG/L		U		0.0750	0.0750	0.500	N	Yes	1	NA
	Copper	7440-50-8	T	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
	Iron	7439-89-6	T	UG/L		U		14.1	14.1	50.0	N	Yes	1	NA
	Lead	7439-92-1	T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Lithium	7439-93-2	T	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	T	UG/L		UJ	I	82.7	82.7	500	N	Yes	1	NA
	Manganese	7439-96-5	T	UG/L		U		1.35	1.35	5.00	N	Yes	1	NA
	Molybdenum	7439-98-7	T	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	T	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	T	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	T	UG/L	1.61	J	I	0.899	0.899	1.00	Y	Yes	1	NA
	Zinc	7440-66-6	T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	T	UG/L		U		0.101	0.101	0.200	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

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-3
Sys Sample Code	JSF-STR-FLB01-20190206
Sample Name	JSF-STR-FLB01-20190206
Sample Date	2/6/2019 12:20:00 PM
Location	
Sample Type	FLB
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	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L		U		0.323	0.323	1.00	N	Yes	1	NA
	Barium	7440-39-3	D	UG/L	3.11	J	RL	1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L		UJ	I	116	116	500	N	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L		U		0.0750	0.0750	0.500	N	Yes	1	NA
	Copper	7440-50-8	D	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
	Iron	7439-89-6	D	UG/L		U		14.1	14.1	50.0	N	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Lithium	7439-93-2	D	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L		UJ	I	82.7	82.7	500	N	Yes	1	NA
	Manganese	7439-96-5	D	UG/L		U		1.35	1.35	5.00	N	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L	1.39	J	I	0.899	0.899	1.00	Y	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-4
Sys Sample Code	JSF-STR-HR07-CC-SUR-20190206
Sample Name	JSF-STR-HR07-CC-SUR-20190206
Sample Date	2/6/2019 12:30:00 PM
Location	JSF-HR07
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	101			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	125			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	7.70			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.612	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.614	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	25.5			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	26.6			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	27100	J	I	116	116	500	Y	Yes	1	NA
			T	UG/L	28300	J	I	116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.486	J	RL	0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.779			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
			T	UG/L	0.956	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L		U*	BL	19.9	19.9	50.0	N	Yes	1	NA
			T	UG/L	362	J	M-,MP	14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.288	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
			T	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	6780	J	I	82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	7310	J	I	82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	8.76			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-4
Sys Sample Code	JSF-STR-HR07-CC-SUR-20190206
Sample Name	JSF-STR-HR07-CC-SUR-20190206
Sample Date	2/6/2019 12:30:00 PM
Location	JSF-HR07
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	28.4			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		J	P+	0.632	0.632	5.00	Y	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
			T	UG/L	0.392	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF,I	1.67	1.67	1.67	N	Yes	1	NA
			T	UG/L		U*	BE,BF,I,M-	1.72	1.72	1.72	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L	3.52	J	RL	3.22	3.22	5.00	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	12.9			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0826	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	15.4			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-5
Sys Sample Code	JSF-STR-HR07-LB-SUR-20190206
Sample Name	JSF-STR-HR07-LB-SUR-20190206
Sample Date	2/6/2019 1:00:00 PM
Location	JSF-HR07
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	103			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	138			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	8.80			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.534	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.648	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	24.4			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	27.0			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		UJ	I	0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		UJ	I	30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	28600	J	I	116	116	500	Y	Yes	1	NA
			T	UG/L	29300	J	I	116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.544			0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.769			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
			T	UG/L	1.05	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L		U*	BL	19.0	19.0	50.0	N	Yes	1	NA
			T	UG/L	229	J	M-,MP	14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.297	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L		UJ	I	3.14	3.14	5.00	N	Yes	1	NA
			T	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	7180	J	I	82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	7270	J	I	82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	11.4			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-5
Sys Sample Code	JSF-STR-HR07-LB-SUR-20190206
Sample Name	JSF-STR-HR07-LB-SUR-20190206
Sample Date	2/6/2019 1:00:00 PM
Location	JSF-HR07
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	28.3			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
			T	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF,I	1.61	1.61	1.61	N	Yes	1	NA
			T	UG/L		U*	BE,BF,I,M-	2.22	2.22	2.22	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	13.7			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0862	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	16.6			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-6
Sys Sample Code	JSF-STR-HR07-RB-SUR-20190206
Sample Name	JSF-STR-HR07-RB-SUR-20190206
Sample Date	2/6/2019 1:20:00 PM
Location	JSF-HR07
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	95.5			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	134			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	10.6			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.424	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.489	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	23.0			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	25.6			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	29000	J	I	116	116	500	Y	Yes	1	NA
			T	UG/L	26600	J	I	116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.916			0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.757			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L	0.664	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
			T	UG/L	0.926	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L		U*	BL	18.3	18.3	50.0	N	Yes	1	NA
			T	UG/L	221	J	M-,MP	14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.333	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
			T	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	8000	J	FG,I	82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	7070	J	FG,I	82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	15.3			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-6
Sys Sample Code	JSF-STR-HR07-RB-SUR-20190206
Sample Name	JSF-STR-HR07-RB-SUR-20190206
Sample Date	2/6/2019 1:20:00 PM
Location	JSF-HR07
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	29.1			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
			T	UG/L	0.385	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF,I	1.14	1.14	1.14	N	Yes	1	NA
			T	UG/L		U*	BE,BF,I,M-	1.66	1.66	1.66	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L	4.49	J	RL	3.22	3.22	5.00	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	13.2			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0825	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	15.2			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-7
Sys Sample Code	JSF-STR-HR08-CC-SUR-20190206
Sample Name	JSF-STR-HR08-CC-SUR-20190206
Sample Date	2/6/2019 1:50:00 PM
Location	JSF-HR08
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	93.5			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	144			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	6.30			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.531	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.583	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	25.5			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	24.4			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	28200	J	I	116	116	500	Y	Yes	1	NA
			T	UG/L	26300	J	I	116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.482	J	RL	0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.607			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
			T	UG/L	0.797	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L		U*	BL	15.0	15.0	50.0	N	Yes	1	NA
			T	UG/L	162	J	M-,MP	14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.243	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
			T	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	7600	J	FG,I	82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	6750	J	FG,I	82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	8.10			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-7
Sys Sample Code	JSF-STR-HR08-CC-SUR-20190206
Sample Name	JSF-STR-HR08-CC-SUR-20190206
Sample Date	2/6/2019 1:50:00 PM
Location	JSF-HR08
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	22.1			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
			T	UG/L	0.418	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF,I	1.38	1.38	1.38	N	Yes	1	NA
			T	UG/L		U*	BE,BF,I,M-	1.85	1.85	1.85	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	12.8			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0853	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	15.0			0.380	0.380	1.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-8
Sys Sample Code	JSF-STR-HR08-LB-SUR-20190206
Sample Name	JSF-STR-HR08-LB-SUR-20190206
Sample Date	2/6/2019 2:05:00 PM
Location	JSF-HR08
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	103			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	140			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	9.20			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.438	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.664	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	24.2			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	88.0			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	30300	J	I	116	116	500	Y	Yes	1	NA
			T	UG/L	29000	J	I	116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.399	J	RL	0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.734			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
			T	UG/L	1.05	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L		U*	BL	17.5	17.5	50.0	N	Yes	1	NA
			T	UG/L	300	J	M-,MP	14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.323	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
			T	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	7290	J	I	82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	7390	J	I	82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	11.3			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-8
Sys Sample Code	JSF-STR-HR08-LB-SUR-20190206
Sample Name	JSF-STR-HR08-LB-SUR-20190206
Sample Date	2/6/2019 2:05:00 PM
Location	JSF-HR08
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	28.3			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
			T	UG/L	0.485	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF,I	1.65	1.65	1.65	N	Yes	1	NA
			T	UG/L		U*	BE,BF,I,M-	1.77	1.77	1.77	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L	3.57	J	RL	3.22	3.22	5.00	Y	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	13.1			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0865	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	16.9			0.380	0.380	1.00	Y	Yes	1	NA

Lab Sample ID	180-86537-9
Sys Sample Code	JSF-STR-HR08-RB-SUR-20190206
Sample Name	JSF-STR-HR08-RB-SUR-20190206
Sample Date	2/6/2019 2:25:00 PM
Location	JSF-HR08
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
SM 2340B	Hardness asCaCO3	HARD	T	MG/L	108			0.0218	0.0218	0.670	Y	Yes	1	NA
SM2540C	Total Dissolved	TDS	T	MG/L	144			10.0	10.0	10.0	Y	Yes	1	NA
SM2540D	Total Suspended	TSS	T	MG/L	10.4			0.500	0.500	0.500	Y	Yes	1	NA
SW-846 6020A	Antimony	7440-36-0	D	UG/L	0.740	J	RL	0.378	0.378	2.00	Y	Yes	1	NA
			T	UG/L		U		0.378	0.378	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	D	UG/L	0.565	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
			T	UG/L	0.630	J	RL	0.323	0.323	1.00	Y	Yes	1	NA
	Barium	7440-39-3	D	UG/L	25.1			1.49	1.49	10.0	Y	Yes	1	NA
			T	UG/L	28.4			1.49	1.49	10.0	Y	Yes	1	NA
	Beryllium	7440-41-7	D	UG/L		UJ	I	0.155	0.155	1.00	N	Yes	1	NA
			T	UG/L		U		0.155	0.155	1.00	N	Yes	1	NA
	Boron	7440-42-8	D	UG/L		UJ	I	30.3	30.3	80.0	N	Yes	1	NA
			T	UG/L		U		30.3	30.3	80.0	N	Yes	1	NA
	Cadmium	7440-43-9	D	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
			T	UG/L		U		0.125	0.125	1.00	N	Yes	1	NA
	Calcium	7440-70-2	D	UG/L	29900	J	I	116	116	500	Y	Yes	1	NA
			T	UG/L	29400			116	116	500	Y	Yes	1	NA
	Chromium	7440-47-3	D	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
			T	UG/L		U		1.53	1.53	2.00	N	Yes	1	NA
	Cobalt	7440-48-4	D	UG/L	0.529			0.0750	0.0750	0.500	Y	Yes	1	NA
			T	UG/L	0.776			0.0750	0.0750	0.500	Y	Yes	1	NA
	Copper	7440-50-8	D	UG/L		U		0.627	0.627	2.00	N	Yes	1	NA
			T	UG/L	1.02	J	RL	0.627	0.627	2.00	Y	Yes	1	NA
	Iron	7439-89-6	D	UG/L	169	J	M-,ZZ	14.1	14.1	50.0	Y	Yes	1	NA
			T	UG/L	238	J	M-,MP	14.1	14.1	50.0	Y	Yes	1	NA
	Lead	7439-92-1	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L	0.327	J	RL	0.128	0.128	1.00	Y	Yes	1	NA
	Lithium	7439-93-2	D	UG/L		UJ	I	3.14	3.14	5.00	N	Yes	1	NA
			T	UG/L		U		3.14	3.14	5.00	N	Yes	1	NA
	Magnesium	7439-95-4	D	UG/L	7920	J	I	82.7	82.7	500	Y	Yes	1	NA
			T	UG/L	8380			82.7	82.7	500	Y	Yes	1	NA
	Manganese	7439-96-5	D	UG/L	15.3			1.35	1.35	5.00	Y	Yes	1	NA

TVA TDEC Program
Facility: John Sevier Fossil Plant
SDG: 180865371

Lab Sample ID	180-86537-9
Sys Sample Code	JSF-STR-HR08-RB-SUR-20190206
Sample Name	JSF-STR-HR08-RB-SUR-20190206
Sample Date	2/6/2019 2:25:00 PM
Location	JSF-HR08
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
SW-846 6020A	Manganese	7439-96-5	T	UG/L	30.9			1.35	1.35	5.00	Y	Yes	1	NA
	Molybdenum	7439-98-7	D	UG/L		U*	BL,I,P+	2.48	2.48	5.00	N	Yes	1	NA
			T	UG/L		U		0.610	0.610	5.00	N	Yes	1	NA
	Nickel	7440-02-0	D	UG/L		U		0.312	0.312	1.00	N	Yes	1	NA
			T	UG/L	0.465	J	RL	0.312	0.312	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	D	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
			T	UG/L		U		2.62	2.62	5.00	N	Yes	1	NA
	Silver	7440-22-4	D	UG/L		UJ	I	0.121	0.121	1.00	N	Yes	1	NA
			T	UG/L		U		0.121	0.121	1.00	N	Yes	1	NA
	Thallium	7440-28-0	D	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
			T	UG/L		U		0.128	0.128	1.00	N	Yes	1	NA
	Vanadium	7440-62-2	D	UG/L		U*	BF,I	1.73	1.73	1.73	N	Yes	1	NA
			T	UG/L		U*	BE,BF,M-	1.80	1.80	1.80	N	Yes	1	NA
	Zinc	7440-66-6	D	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
			T	UG/L		U		3.22	3.22	5.00	N	Yes	1	NA
SW-846 7470A	Mercury	7439-97-6	D	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
			T	UG/L		U		0.101	0.101	0.200	N	Yes	1	NA
SW-846 9056A	Chloride	16887-00-6	N	MG/L	12.5			0.715	0.715	1.00	Y	Yes	1	NA
	Fluoride	16984-48-8	N	MG/L	0.0775	J	RL	0.0263	0.0263	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	MG/L	14.1			0.380	0.380	1.00	Y	Yes	1	NA

SECTION 3

SUPPORTING DOCUMENTATION FOR QUALIFIERS

ENVIRONMENTAL STANDARDS

INORGANIC ANALYSIS SUPPORT DOCUMENTATION

ESI project name: TVA JSF STR
Sample Collection Dates: 2/6/2019
Job Number: 20188396.A000, Task 4
Project Manager: Andrew Piasecki
Laboratory: TestAmerica Pittsburgh

Reviewed by: Caroline R.
Approved by: ATC
Completion Date: 3/19

Applicable Sample No's (X)

Refer to Table 1 in the Quality Assurance Review

Deliverable:			Sample No.	Lab Control No.
	CLP (Full)	( )		
	Level IV (Full)	(X)	All	180-86537-1
	Limited	( )		
	Other:			

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

	Criteria Examined in Detail Check (√) if Yes or Footnote Letter for Comments Below					Problems Identified Check (√) if Yes or Footnote Letter for Comments Below					Support Documentation Attachments Check (√) if Yes or Footnote Letter for Comments Below				
	6020A	7470A	9056A	Wet Chem		6020A	7470A	9056A	Wet Chem		6020A	7470A	9056A	Wet 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	X	
Duplicate Analysis: (X) Field (X) Lab	X	X	X	X							X	X	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															
ICP Interference Checks															
ICP Serial Dilutions	X										X				
ICP Post-Digestion Spike	X					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 Tune, IS recovery, T vs D	X					X					X				

Comments:

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190206_1A

TestAmerica Job ID: 180-86537-1

Equip Blank BE

Client Sample ID: JSF-STR-EB01-20190206

Date Collected: 02/06/19 12:15
Date Received: 02/08/19 09:00

Lab Sample ID: 180-86537-2

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			02/14/19 08:34	1
Fluoride	ND		0.100	0.0263	mg/L			02/14/19 08:34	1
Sulfate	ND		1.00	0.380	mg/L			02/14/19 08:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		02/13/19 12:03	02/20/19 02:08	1
Arsenic	ND		1.00	0.323	ug/L		02/13/19 12:03	02/20/19 02:08	1
Barium	ND		10.0	1.49	ug/L		02/13/19 12:03	02/20/19 02:08	1
Beryllium	ND		1.00	0.155	ug/L		02/13/19 12:03	02/20/19 02:08	1
Boron	ND		80.0	30.3	ug/L		02/13/19 12:03	02/20/19 02:08	1
Cadmium	ND		1.00	0.125	ug/L		02/13/19 12:03	02/20/19 02:08	1
Calcium	ND		500	116	ug/L		02/13/19 12:03	02/20/19 02:08	1
Chromium	ND		2.00	1.53	ug/L		02/13/19 12:03	02/20/19 02:08	1
Cobalt	ND		0.500	0.0750	ug/L		02/13/19 12:03	02/20/19 02:08	1
Copper	ND		2.00	0.627	ug/L		02/13/19 12:03	02/20/19 02:08	1
Iron	ND		50.0	14.1	ug/L		02/13/19 12:03	02/20/19 02:08	1
Lead	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 02:08	1
Lithium	ND		5.00	3.14	ug/L		02/13/19 12:03	02/20/19 02:08	1
Magnesium	ND		500	82.7	ug/L		02/13/19 12:03	02/20/19 02:08	1
Manganese	ND		5.00	1.35	ug/L		02/13/19 12:03	02/20/19 02:08	1
Molybdenum	ND		5.00	0.610	ug/L		02/13/19 12:03	02/20/19 02:08	1
Nickel	ND		1.00	0.312	ug/L		02/13/19 12:03	02/20/19 02:08	1
Selenium	ND		5.00	2.62	ug/L		02/13/19 12:03	02/20/19 02:08	1
Silver	ND		1.00	0.121	ug/L		02/13/19 12:03	02/20/19 02:08	1
Thallium	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 02:08	1
* **Vanadium**	8.05		1.00	0.899	ug/L		02/13/19 12:03	02/20/19 02:08	1
Zinc	ND		5.00	3.22	ug/L		02/13/19 12:03	02/20/19 02:08	1

U 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		02/13/19 17:25	02/14/19 19:28	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		0.670	0.0218	mg/L			02/20/19 13:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	10.0	mg/L			02/13/19 13:35	1
Total Suspended Solids	ND		0.500	0.500	mg/L			02/12/19 08:42	1

9

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190206_1A

FLD BLK
BF

TestAmerica Job ID: 180-86537-1

Client Sample ID: JSF-STR-FB01-20190206

Lab Sample ID: 180-86537-1

Date Collected: 02/06/19 12:00
Matrix: Water
Date Received: 02/08/19 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			02/14/19 08:18	1
Fluoride	ND		0.100	0.0263	mg/L			02/14/19 08:18	1
Sulfate	ND		1.00	0.380	mg/L			02/14/19 08:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		02/13/19 12:03	02/20/19 02:03	1
Arsenic	ND		1.00	0.323	ug/L		02/13/19 12:03	02/20/19 02:03	1
* **Barium** 24.05	**4.81**	**J**	10.0	1.49	ug/L		02/13/19 12:03	02/20/19 02:03	1
Beryllium	ND		1.00	0.155	ug/L		02/13/19 12:03	02/20/19 02:03	1
Boron U* ~~No QUAL~~	ND		80.0	30.3	ug/L		02/13/19 12:03	02/20/19 02:03	1
Cadmium	ND		1.00	0.125	ug/L		02/13/19 12:03	02/20/19 02:03	1
Calcium >5x	ND		500	116	ug/L		02/13/19 12:03	02/20/19 02:03	1
Chromium	ND		2.00	1.53	ug/L		02/13/19 12:03	02/20/19 02:03	1
Cobalt	ND		0.500	0.0750	ug/L		02/13/19 12:03	02/20/19 02:03	1
Copper	ND		2.00	0.627	ug/L		02/13/19 12:03	02/20/19 02:03	1
Iron	ND		50.0	14.1	ug/L		02/13/19 12:03	02/20/19 02:03	1
Lead	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 02:03	1
Lithium	ND		5.00	3.14	ug/L		02/13/19 12:03	02/20/19 02:03	1
Magnesium	ND		500	82.7	ug/L		02/13/19 12:03	02/20/19 02:03	1
Manganese	ND		5.00	1.35	ug/L		02/13/19 12:03	02/20/19 02:03	1
Molybdenum	ND		5.00	0.610	ug/L		02/13/19 12:03	02/20/19 02:03	1
Nickel	ND		1.00	0.312	ug/L		02/13/19 12:03	02/20/19 02:03	1
Selenium	ND		5.00	2.62	ug/L		02/13/19 12:03	02/20/19 02:03	1
Silver	ND		1.00	0.121	ug/L		02/13/19 12:03	02/20/19 02:03	1
Thallium	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 02:03	1
* **Vanadium** 10.9	**2.18**		1.00	0.899	ug/L		02/13/19 12:03	02/20/19 02:03	1
Zinc U* 4,5,6,7,8,9,10,11,12 113	ND		5.00	3.22	ug/L		02/13/19 12:03	02/20/19 02:03	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		02/13/19 17:25	02/14/19 19:27	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		0.670	0.0218	mg/L			02/20/19 13:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	10.0	mg/L			02/13/19 13:35	1
Total Suspended Solids	ND		0.500	0.500	mg/L			02/12/19 08:42	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190206_1A

TestAmerica Job ID: 180-86537-1

Client Sample ID: JSF-STR-FLB01-20190206

Lab Sample ID: 180-86537-3

Date Collected: 02/06/19 12:20
Date Received: 02/08/19 09:00

Matrix: Water

Filter Blks (BF) Dates Only

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		02/13/19 12:03	02/20/19 02:13	1
Arsenic	ND		1.00	0.323	ug/L		02/13/19 12:03	02/20/19 02:13	1
Barium	**3.11**	J	10.0	1.49	ug/L		02/13/19 12:03	02/20/19 02:13	1
Beryllium	ND		1.00	0.155	ug/L		02/13/19 12:03	02/20/19 02:13	1
Boron	ND		80.0	30.3	ug/L		02/13/19 12:03	02/20/19 02:13	1
Cadmium	ND		1.00	0.125	ug/L		02/13/19 12:03	02/20/19 02:13	1
Calcium	ND		500	116	ug/L		02/13/19 12:03	02/20/19 02:13	1
Chromium	ND		2.00	1.53	ug/L		02/13/19 12:03	02/20/19 02:13	1
Cobalt	ND		0.500	0.0750	ug/L		02/13/19 12:03	02/20/19 02:13	1
Copper	ND		2.00	0.627	ug/L		02/13/19 12:03	02/20/19 02:13	1
Iron	ND		50.0	14.1	ug/L		02/13/19 12:03	02/20/19 02:13	1
Lead	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 02:13	1
Lithium	ND		5.00	3.14	ug/L		02/13/19 12:03	02/20/19 02:13	1
Magnesium	ND		500	82.7	ug/L		02/13/19 12:03	02/20/19 02:13	1
Manganese	ND		5.00	1.35	ug/L		02/13/19 12:03	02/20/19 02:13	1
Molybdenum	ND		5.00	0.610	ug/L		02/13/19 12:03	02/20/19 02:13	1
Nickel	ND		1.00	0.312	ug/L		02/13/19 12:03	02/20/19 02:13	1
Selenium	ND		5.00	2.62	ug/L		02/13/19 12:03	02/20/19 02:13	1
Silver	ND		1.00	0.121	ug/L		02/13/19 12:03	02/20/19 02:13	1
Thallium	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 02:13	1
Vanadium 6.95	**1.39**		1.00	0.899	ug/L		02/13/19 12:03	02/20/19 02:13	1
Zinc	ND		5.00	3.22	ug/L		02/13/19 12:03	02/20/19 02:13	1

4,5,6,7,8,9,10,11,12,13

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		02/13/19 17:25	02/14/19 19:29	1

9

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190204_1A

TestAmerica Job ID: 180-86532-1

FILTER BLKS

BF

TOTAL ONLY

Client Sample ID: JSF-STR-FLB01-20190205
Date Collected: 02/05/19 08:55
Date Received: 02/08/19 09:00

Lab Sample ID: 180-86532-12
Matrix: Water

9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		02/12/19 12:00	02/19/19 21:35	1
Arsenic	ND		1.00	0.323	ug/L		02/12/19 12:00	02/19/19 21:35	1
* Barium 19.3	3.86	J	10.0	1.49	ug/L		02/12/19 12:00	02/19/19 21:35	1
Beryllium U*	ND		1.00	0.155	ug/L		02/12/19 12:00	02/19/19 21:35	1
Boron 75*	ND		80.0	30.3	ug/L		02/12/19 12:00	02/19/19 21:35	1
Cadmium	ND		1.00	0.125	ug/L		02/12/19 12:00	02/19/19 21:35	1
Calcium	ND		500	116	ug/L		02/12/19 12:00	02/19/19 21:35	1
Chromium	ND		2.00	1.53	ug/L		02/12/19 12:00	02/19/19 21:35	1
Cobalt	ND		0.500	0.0750	ug/L		02/12/19 12:00	02/19/19 21:35	1
Copper	ND		2.00	0.627	ug/L		02/12/19 12:00	02/19/19 21:35	1
Iron	ND		50.0	14.1	ug/L		02/12/19 12:00	02/19/19 21:35	1
* Lead 2.035	0.407	J	1.00	0.128	ug/L		02/12/19 12:00	02/19/19 21:35	1
Lithium U* 12	ND		5.00	3.14	ug/L		02/12/19 12:00	02/19/19 21:35	1
Magnesium	ND		500	82.7	ug/L		02/12/19 12:00	02/19/19 21:35	1
Manganese	ND		5.00	1.35	ug/L		02/12/19 12:00	02/19/19 21:35	1
Molybdenum	ND		5.00	0.610	ug/L		02/12/19 12:00	02/19/19 21:35	1
* Nickel 2.225	0.445	J	1.00	0.312	ug/L		02/12/19 12:00	02/19/19 21:35	1
Selenium	ND		5.00	2.62	ug/L		02/12/19 12:00	02/19/19 21:35	1
Silver U* 10,11,12	ND		1.00	0.121	ug/L		02/12/19 12:00	02/19/19 21:35	1
Thallium	ND		1.00	0.128	ug/L		02/12/19 12:00	02/19/19 21:35	1
Vanadium	1.14		1.00	0.899	ug/L		02/12/19 12:00	02/19/19 21:35	1
* Zinc 37.4	7.48		5.00	3.22	ug/L		02/12/19 12:00	02/19/19 21:35	1

U* - No Qual / ND

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		02/12/19 09:24	02/12/19 20:06	1

ENVIRONMENTAL STANDARDS, INC.
EVALUATION OF TOTAL vs. DISSOLVED CONCENTRATIONS

Effective Date: 11/23/2015
Revision: 0

Reporting Level: ⦿ MDL ○ QL
Units: ug/L
1

PRECISION OBJECTIVES:
If Both Results ≥ 5 × Their QL, RPD ≤: 10
If Either Result < 5 × Its QL, Dif. ≤: 1 **× Highest QL**

Total Sample ID: 180-86537-6 **Dissolved Sample ID:** 180-86537-6

Analyte	Total Concentration	Qual	QL	MDL	Dissolved Concentration	Qual	QL	MDL	Difference	RPD	Flag
Antimony	0.378	U	2	0.378	0.378	U	2	0.378	NA	NA	
Beryllium	0.155	U	1	0.155	0.155	U	1	0.155	NA	NA	
Boron	30.3	U	80	30.3	30.3	U	80	30.3	NA	NA	
Cadmium	0.125	U	1	0.125	0.125	U	1	0.125	NA	NA	
Calcium	26600		500	116	29000		500	116	NA	9.0%	
Chromium	1.53	U	2	1.53	1.53	U	2	1.53	NA	NA	
Cobalt	0.757		0.5	0.075	0.916		0.5	0.075	0.159	NA	
Lithium	3.14	U	5	3.14	3.14	U	5	3.14	NA	NA	
Magnesium	7070		500	82.7	8000		500	82.7	NA	12.0%	J
Mercury	0.101	U	0.2	0.101	0.101	U	0.2	0.101	NA	NA	
Molybdenum	0.61	U	5	0.61	0.61	U	5	0.61	NA	NA	
Selenium	2.62	U	5	2.62	2.62	U	5	2.62	NA	NA	
Silver	0.121	U	1	0.121	0.121	U	1	0.121	NA	NA	
Thallium	0.128	U	1	0.128	0.128	U	1	0.128	NA	NA	

NOTES:

Qual: Qualifier(s) based on evaluation(s) other than Total/ vs. Dissolved comparison, if applicable (J, U, U* or B)
RPD: Relative Percent Difference
QL: Quantitation Limit
MDL: Method Detection Limit
RL: Reporting Limit. RL = QL for QL reporting and MDL for MDL reporting
J: The analyte concentration should be considered estimated
U: The analyte was not detected in the sample at or above the RL indicated. The RL will be used for comparison purposes.
UJ: The analyte was not detected in the sample at or above the Reporting Limit Indicated. The RL is approximate.
R: The analyte was analyzed for and detected, but sample results are unreliable. The presence or absence of the analyte cannot be verified.
UR: The analyte was analyzed for and not detected, but the determination that the analyte was not present in the sample is unreliable. The presence or absence of the analyte cannot be verified.
U* The result was blank qualified. The RL will be used for comparison purposes.

Comments:

ENVIRONMENTAL STANDARDS, INC.
EVALUATION OF TOTAL vs. DISSOLVED CONCENTRATIONS

Effective Date: 11/23/2015
Revision: 0

Reporting Level: ⦿ MDL ○ QL
Units: ug/L
1

PRECISION OBJECTIVES:
If Both Results ≥ 5 × Their QL, RPD ≤: 10
If Either Result < 5 × Its QL, Dif. ≤: 1 × Highest QL

Total Sample ID: 180-86537-7 | Dissolved Sample ID: 180-86537-7

Analyte	Total Concentration	Qual	QL	MDL	Dissolved Concentration	Qual	QL	MDL	Difference	RPD	Flag
Antimony	0.378	U	2	0.378	0.378	U	2	0.378	NA	NA	
Barium	24.4		10	1.49	25.5		10	1.49	1.1	NA	
Beryllium	0.155	U	1	0.155	0.155	U	1	0.155	NA	NA	
Boron	30.3	U	80	30.3	30.3	U	80	30.3	NA	NA	
Cadmium	0.125	U	1	0.125	0.125	U	1	0.125	NA	NA	
Calcium	26300		500	116	28200		500	116	NA	7.0%	
Chromium	1.53	U	2	1.53	1.53	U	2	1.53	NA	NA	
Lithium	3.14	U	5	3.14	3.14	U	5	3.14	NA	NA	
Magnesium	6750		500	82.7	7600		500	82.7	NA	12.0%	J
Mercury	0.101	U	0.2	0.101	0.101	U	0.2	0.101	NA	NA	
Molybdenum	0.61	U	5	0.61	0.61	U	5	0.61	NA	NA	
Selenium	2.62	U	5	2.62	2.62	U	5	2.62	NA	NA	
Silver	0.121	U	1	0.121	0.121	U	1	0.121	NA	NA	
Thallium	0.128	U	1	0.128	0.128	U	1	0.128	NA	NA	
Zinc	3.22	U	5	3.22	3.22	U	5	3.22	NA	NA	

NOTES:

Qual: Qualifier(s) based on evaluation(s) other than Total/ vs. Dissolved comparison, if applicable (J, U, U* or B)
RPD: Relative Percent Difference
QL: Quantitation Limit
MDL: Method Detection Limit
RL: Reporting Limit. RL = QL for QL reporting and MDL for MDL reporting
J: The analyte concentration should be considered estimated
U: The analyte was not detected in the sample at or above the RL indicated. The RL will be used for comparison purposes.
UJ: The analyte was not detected in the sample at or above the Reporting Limit Indicated. The RL is approximate.
R: The analyte was analyzed for and detected, but sample results are unreliable. The presence or absence of the analyte cannot be verified.
UR: The analyte was analyzed for and not detected, but the determination that the analyte was not present in the sample is unreliable. The presence or absence of the analyte cannot be verified.
U* The result was blank qualified. The RL will be used for comparison purposes.

Comments:

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190206_1A

TestAmerica Job ID: 180-86537-1

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

Lab Sample ID: MB 180-270304/1-A
Matrix: Water
Analysis Batch: 270958

-1 thru -9 T&D

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 270304

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		02/13/19 12:03	02/20/19 01:33	1
Arsenic	ND		1.00	0.323	ug/L		02/13/19 12:03	02/20/19 01:33	1
Barium	ND		10.0	1.49	ug/L		02/13/19 12:03	02/20/19 01:33	1
Beryllium	ND		1.00	0.155	ug/L		02/13/19 12:03	02/20/19 01:33	1
Boron	ND		80.0	30.3	ug/L		02/13/19 12:03	02/20/19 01:33	1
Cadmium	ND		1.00	0.125	ug/L		02/13/19 12:03	02/20/19 01:33	1
Calcium	ND		500	116	ug/L		02/13/19 12:03	02/20/19 01:33	1
Chromium	ND		2.00	1.53	ug/L		02/13/19 12:03	02/20/19 01:33	1
Cobalt	ND		0.500	0.0750	ug/L		02/13/19 12:03	02/20/19 01:33	1
Copper	ND		2.00	0.627	ug/L		02/13/19 12:03	02/20/19 01:33	1
Iron	15.51	J	50.0	14.1	ug/L		02/13/19 12:03	02/20/19 01:33	1
Lead	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 01:33	1
Lithium	ND		5.00	3.14	ug/L		02/13/19 12:03	02/20/19 01:33	1
Magnesium	ND		500	82.7	ug/L		02/13/19 12:03	02/20/19 01:33	1
Manganese	ND		5.00	1.35	ug/L		02/13/19 12:03	02/20/19 01:33	1
Molybdenum	ND		5.00	0.610	ug/L		02/13/19 12:03	02/20/19 01:33	1
Nickel	ND		1.00	0.312	ug/L		02/13/19 12:03	02/20/19 01:33	1
Selenium	ND		5.00	2.62	ug/L		02/13/19 12:03	02/20/19 01:33	1
Silver	ND		1.00	0.121	ug/L		02/13/19 12:03	02/20/19 01:33	1
Thallium	ND		1.00	0.128	ug/L		02/13/19 12:03	02/20/19 01:33	1
Vanadium	ND		1.00	0.899	ug/L		02/13/19 12:03	02/20/19 01:33	1
Zinc	ND		5.00	3.22	ug/L		02/13/19 12:03	02/20/19 01:33	1

U* No Qual All > 5X

BL

77, 55

T 25X

D 4, 5, 6, 7, 8,

Lab Sample ID: LCS 180-270304/2-A
Matrix: Water
Analysis Batch: 270958

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 270304

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	500	446.2		ug/L		89	80 - 120
Arsenic	40.0	40.94		ug/L		102	80 - 120
Barium	2000	1684		ug/L		84	80 - 120
Beryllium	50.0	49.40		ug/L		99	80 - 120
Boron	1000	831.8		ug/L		83	80 - 120
Cadmium	50.0	59.60		ug/L		119	80 - 120
Calcium	50000	47530		ug/L		95	80 - 120
Chromium	200	203.1		ug/L		102	80 - 120
Cobalt	500	459.4		ug/L		92	80 - 120
Copper	250	247.2		ug/L		99	80 - 120
Iron	1000	930.4		ug/L		93	80 - 120
Lead	20.0	19.30		ug/L		97	80 - 120
Lithium	50.0	48.12		ug/L		96	80 - 120
Magnesium	50000	44090		ug/L		88	80 - 120
Manganese	500	548.0		ug/L		110	80 - 120
Molybdenum	1000	1139		ug/L		114	80 - 120
Nickel	500	452.5		ug/L		91	80 - 120
Selenium	10.0	8.664		ug/L		87	80 - 120
Silver	50.0	49.58		ug/L		99	80 - 120
Thallium	50.0	48.81		ug/L		98	80 - 120

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190206_1A

TestAmerica Job ID: 180-86537-1

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

Lab Sample ID: LCS 180-270304/2-A
Matrix: Water
Analysis Batch: 270958

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 270304

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	500	412.9		ug/L		83	80 - 120
Zinc	500	563.0		ug/L		113	80 - 120

Lab Sample ID: 180-86537-9 MS
Matrix: Water
Analysis Batch: 270958

Client Sample ID: JSF-STR-HR08-RB-SUR-20190206
Prep Type: Total Recoverable
Prep Batch: 270304

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		500	444.2		ug/L		89	75 - 125
Arsenic	0.630	J	40.0	39.38		ug/L		97	75 - 125
Barium	28.4		2000	1608		ug/L		79	75 - 125
Beryllium	ND		50.0	51.10		ug/L		102	75 - 125
Boron	ND		1000	898.7		ug/L		90	75 - 125
Cadmium	ND		50.0	53.95		ug/L		108	75 - 125
Calcium	29400		50000	77300		ug/L		96	75 - 125
Chromium	ND		200	190.7		ug/L		95	75 - 125
Cobalt	0.776		500	379.4		ug/L		76	75 - 125
Copper	1.02	J	250	198.6		ug/L		79	75 - 125
Iron	238	B F1 F2	1000	956.1	F1	ug/L		72	75 - 125
Lead	0.327	J	20.0	17.90		ug/L		88	75 - 125
Lithium	ND		50.0	50.36		ug/L		101	75 - 125
Magnesium	8380		50000	53140		ug/L		90	75 - 125
Manganese	30.9		500	534.4		ug/L		101	75 - 125
Molybdenum	ND		1000	1075		ug/L		108	75 - 125
Nickel	0.465	J	500	378.8		ug/L		76	75 - 125
Selenium	ND		10.0	8.904		ug/L		89	75 - 125
Silver	ND		50.0	48.50		ug/L		97	75 - 125
Thallium	ND		50.0	42.60		ug/L		85	75 - 125
Vanadium	1.80	F1	500	352.2	F1	ug/L		70	75 - 125
Zinc	ND		500	450.7		ug/L		90	75 - 125

Lab Sample ID: 180-86537-9 MSD
Matrix: Water
Analysis Batch: 270958

Client Sample ID: JSF-STR-HR08-RB-SUR-20190206
Prep Type: Total Recoverable
Prep Batch: 270304

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		500	464.6		ug/L		93	75 - 125	4	20
Arsenic	0.630	J	40.0	41.96		ug/L		103	75 - 125	6	20
Barium	28.4		2000	1705		ug/L		84	75 - 125	6	20
Beryllium	ND		50.0	50.42		ug/L		101	75 - 125	1	20
Boron	ND		1000	872.0		ug/L		87	75 - 125	3	20
Cadmium	ND		50.0	59.42		ug/L		119	75 - 125	10	20
Calcium	29400		50000	80340		ug/L		102	75 - 125	4	20
Chromium	ND		200	221.8		ug/L		111	75 - 125	15	20
Cobalt	0.776		500	419.1		ug/L		84	75 - 125	10	20
Copper	1.02	J	250	214.3		ug/L		85	75 - 125	8	20
Iron	238	B F1 F2	1000	1206	F2	ug/L		97	75 - 125	23	20
Lead	0.327	J	20.0	19.84		ug/L		98	75 - 125	10	20
Lithium	ND		50.0	49.70		ug/L		99	75 - 125	1	20

250
1081

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Pittsburgh Job No.: 180-86537-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 180-270988/5 02/20/2019 12:28		CCB 180-270988/10 02/20/2019 12:45		CCB 180-270988/22 02/20/2019 13:25		CCB 180-270988/34 02/20/2019 14:04	
		Found	C	Found	C	Found	C	Found	C
Antimony	2.00	ND		ND		ND		ND	
Arsenic	1.00	ND		ND		ND		ND	
Barium	10.0	ND		ND		ND		ND	
Beryllium	1.00	ND		ND		ND		ND	
Boron	80.0	ND		ND		42.15	J	ND	
Cadmium	1.00	ND		ND		ND		ND	
Calcium	500	ND		ND		ND		ND	
Chromium	2.00	ND		ND		ND		ND	
Cobalt	0.500	ND		ND		ND		ND	
Copper	2.00	ND		ND		ND		ND	
Iron	50.0	ND		ND		ND		ND	
Lead	1.00	ND		ND		ND		ND	
Lithium	5.00	ND		ND		ND		ND	
Magnesium	500	ND		ND		ND		ND	
Manganese	5.00	ND		ND		ND		ND	
Molybdenum	5.00	ND		ND		ND		ND	
Nickel	1.00	ND		ND		ND		ND	
Selenium	5.00	ND		ND		ND		ND	
Silver	1.00	ND		ND		ND		ND	
Thallium	1.00	ND		ND		ND		ND	
Vanadium	1.00	ND		ND		ND		ND	
Zinc	5.00	ND		ND		ND		ND	

-10, 11, 12, 13

5x
BAL
B: 210.75 ug/L

B: U* in -11 (tot & Diss)
-12 (tot)
all others ND

Italicized analytes were not requested for this sequence.

FORM III-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Pittsburgh Job No.: 180-86537-1

SDG No.:

Concentration Units: ug/L

brackets 9T, 9D

Analyte	RL	CCB8 180-270958/95 02/20/2019 03:25		CCB9 180-270958/107 02/20/2019 04:30					
		Found	C	Found	C	Found	C	Found	C
Antimony	2.00	ND		ND					
Arsenic	1.00	ND		ND					
Barium	10.0	ND		ND					
Beryllium	1.00	ND		ND					
Boron	80.0	ND		ND					
Cadmium	1.00	ND		ND					
Calcium	500	ND		ND					
Chromium	2.00	ND		ND					
Cobalt	0.500	ND		ND					
Copper	2.00	ND		ND					
Iron	50.0	ND		ND					
Lead	1.00	ND		ND					
Lithium	5.00	ND		ND					
Magnesium	500	ND		ND					
Manganese	5.00	ND		ND					
Molybdenum	5.00	ND		0.7930	J				
Nickel	1.00	ND		ND					
Selenium	5.00	ND		ND					
Silver	1.00	ND		ND					
Thallium	1.00	ND		ND					
Vanadium	1.00	ND		ND					
Zinc	5.00	ND		ND					

-1 → 9

Mo: 5% BAL / 3.965 ug/L

U* ~~in -4 (tot)~~, -9 (Diss)

Italicized analytes were not requested for this sequence.

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS - TOTAL RECOVERABLE

Client ID: JSF-STR-HR08-RB-SUR-20190206 PDS Lab ID: 180-86537-9 PDS

Lab Name: TestAmerica Pittsburgh Job No.: 180-86537-1

SDG No.:

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Antimony	509.3		ND		500	102	80-120		EPA 6020A
Arsenic	42.13		0.630	J	40.0	104	80-120		EPA 6020A
Barium	1683		28.4		2000	83	80-120		EPA 6020A
Beryllium	50.54		ND		50.0	101	80-120		EPA 6020A
Boron	881.1		ND		1000	88	80-120		EPA 6020A
Cadmium	58.19		ND		50.0	116	80-120		EPA 6020A
Calcium	80320		29400		50000	102	80-120		EPA 6020A
Chromium	222.7		ND		200	111	80-120		EPA 6020A
Cobalt	432.4		0.776		500	86	80-120		EPA 6020A
Copper	221.1		1.02	J	250	88	80-120		EPA 6020A
Iron	1106		238		1000	87	80-120		EPA 6020A
Lead	19.30		0.327	J	20.0	95	80-120		EPA 6020A
Lithium	48.04		ND		50.0	96	80-120		EPA 6020A
Magnesium	55490		8380		50000	94	80-120		EPA 6020A
Manganese	550.4		30.9		500	104	80-120		EPA 6020A
Molybdenum	1251		ND		1000	125	80-120	W	EPA 6020A
Nickel	428.1		0.465	J	500	86	80-120		EPA 6020A
Selenium	9.365		ND		10.0	94	80-120		EPA 6020A
Silver	44.69		ND		50.0	89	80-120		EPA 6020A
Thallium	46.09		ND		50.0	92	80-120		EPA 6020A
Vanadium	411.3		1.80		500	82	80-120		EPA 6020A
Zinc	492.8		ND		500	99	80-120		EPA 6020A

SSR = Spiked Sample Result

assoc samples -4 → 9

Total Mo ~~Mt~~ Pt in -4 ✓
~~Dis~~ CR 3/19/19
others are ND

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

FORM VB - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: JSF-STR-HR08-RB-SUR-20190206 PDS Lab ID: 180-86537-9 PDS

Lab Name: TestAmerica Pittsburgh Job No.: 180-86537-1

SDG No.:

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Antimony	497.3		0.740	J	500	99	80-120		EPA 6020A
Arsenic	40.36		0.565	J	40.0	99	80-120		EPA 6020A
Barium	1639		25.1		2000	81	80-120		EPA 6020A
Beryllium	47.84		ND		50.0	96	80-120		EPA 6020A
Boron	835.8		ND		1000	84	80-120		EPA 6020A
Cadmium	57.17		ND		50.0	114	80-120		EPA 6020A
Calcium	77180		29900		50000	95	80-120		EPA 6020A
Chromium	209.6		ND		200	105	80-120		EPA 6020A
Cobalt	488.2		0.529		500	98	80-120		EPA 6020A
Copper	208.2		ND		250	83	80-120		EPA 6020A
Iron	1017		169		1000	85	80-120		EPA 6020A
Lead	19.08		ND		20.0	95	80-120		EPA 6020A
Lithium	47.60		ND		50.0	95	80-120		EPA 6020A
Magnesium	52110		7920		50000	88	80-120		EPA 6020A
Manganese	521.6		15.3		500	101	80-120		EPA 6020A
Molybdenum	1260		2.48	J	1000	126	80-120	W	EPA 6020A
Nickel	487.0		ND		500	97	80-120		EPA 6020A
Selenium	8.660		ND		10.0	87	80-120		EPA 6020A
Silver	46.62		ND		50.0	93	80-120		EPA 6020A
Thallium	48.53		ND		50.0	97	80-120		EPA 6020A
Vanadium	445.7		1.73		500	89	80-120		EPA 6020A
Zinc	459.6		ND		500	92	80-120		EPA 6020A

SSR = Spiked Sample Result

assoc samples: -4 → 9

Diss Mo P+ in -9

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

FORM VB - IN

15-IN

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

METALS

Lab Name: TestAmerica Pittsburgh Job No.: 180-86537-1

SDG No.:

ICP-MS Instrument ID: X Start Date: 02/19/2019 End Date: 02/20/2019

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 180-270958/2 IC	19:22	100		100		100		100		100	
STD2 180-270958/3 IC	19:28	99		107		109		99		100	
STD3 180-270958/4 IC	19:33	95		107		101		99		99	
ICV 180-270958/5	19:38	95		100		105		96		99	
ICB 180-270958/6	19:43	84		95		97		98		95	
ICVL 180-270958/7	19:49	84		92		101		97		97	
ICSA 180-270958/8	19:54	66		71		65		63		73	
ICSAB 180-270958/9	19:59	53		54		61		56		68	
CCV 180-270958/10	20:04	60		66		78		72		74	
CCB1 180-270958/11	20:09	58		64		75		73		74	
CCV 180-270958/70	01:13	77		73		90		81		87	
CCB6 180-270958/71	01:18	76		73		85		83		85	
MB 180-270304/1-A	01:33	72		64		79		75		81	
LCS 180-270304/2-A	01:38	55		44		56		46		57	
180-86537-1 T	02:03	57		46		61		54		63	
180-86537-2 T	02:08	63		50		65		59		68	
180-86537-3 D	02:13	68		54		67		61		69	
CCV 180-270958/82	02:18	77		73		87		80		84	
CCB7 180-270958/83	02:24	81		77		88		86		88	
180-86537-4 T	02:29	67		57		70		61		71	
180-86537-4 D	02:34	65		53		65		56		66	
180-86537-5 T	02:39	61		50		60		52		62	
180-86537-5 D	02:44	56		47		61		53		63	
180-86537-6 T	02:49	67		56		67		58		68	
180-86537-6 D	02:54	68		57		71		63		72	
180-86537-7 T	02:59	62		51		64		56		66	
180-86537-7 D	03:04	68		56		67		60		68	
180-86537-8 T	03:09	62		51		64		56		65	
180-86537-8 D	03:15	63		50		62		54		63	
CCV 180-270958/94	03:20	78		74		91		82		88	
CCB8 180-270958/95	03:25	84		80		90		89		88	
180-86537-9 T	03:30	75		64		71		67		70	
180-86537-9 SD	03:35	80		73		80		78		80	
180-86537-9 MS	03:40	61		52		60		51		60	
180-86537-9 MSD	03:45	54		44		57		48		56	
180-86537-9 PDS	03:50	55		45		59		50		58	
180-86537-9 D	03:55	56		46		60		52		61	
180-86537-9 SD	04:00	71		61		73		71		74	
180-86537-9 MS	04:05	49		40		53		44		53	
180-86537-9 MSD	04:11	53		44		54		45		55	

FORM XV - IN

180-86537-F-9-A 2/20/2019 3:55:48 AM

User Pre-dilution: 1.000

Diss

Run	Time	6Li	7Li	9Be	10B	11B	13C	23Na	25Mg
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	03:54:52	56.428%	1.048	-0.001	11.400	10.090	0.000	11680.000	0.000
2	03:55:01	55.608%	0.624	0.007	11.030	9.971	0.000	11800.000	0.000
3	03:55:11	56.886%	0.955	0.001	11.100	10.020	0.000	11350.000	0.000
x		56.307%	0.876	0.002	11.180	10.030	0.000	11610.000	0.000
σ		0.648%	0.223	0.004	0.201	0.061	0.000	232.400	0.000
%RSD		1.150	25.460 ND	169.600 ND	1.794	0.603	0.000	2.002	0.000

Run	Time	26Mg	27Al	28Si	37Cl	39K	43Ca	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	03:54:52	7991.000	6.980	2251.000	0.000	1671.000	29360.000	29880.000	45.944%
2	03:55:01	8093.000	6.786	2230.000	0.000	1663.000	29340.000	30100.000	45.276%
3	03:55:11	7677.000	6.406	2235.000	0.000	1674.000	29080.000	29550.000	46.606%
x		7920.000	6.724	2239.000	0.000	1669.000	29260.000	29850.000	45.942%
σ		217.300	0.292	10.630	0.000	5.841	157.100	277.300	0.665%
%RSD		2.743	4.349	0.475	0.000	0.350	0.537	0.929	1.447

Run	Time	47Ti	51V	52Cr	55Mn	56Fe	57Fe	59Co	60Ni
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	03:54:52	1.021	1.676	0.515	15.130	223.700	317.900	0.560	0.278
2	03:55:01	0.868	1.847	0.607	15.470	233.200	310.500	0.460	0.308
3	03:55:11	1.071	1.673	0.484	15.230	49.820	66.080	0.567	0.250
x		0.987	1.732	0.536	15.280	168.900	231.500	0.529	0.279
σ		0.106	0.099	0.064	0.176	103.300	143.300	0.060	0.029
%RSD		10.710	5.743	11.980	1.152	61.130	61.900	11.300	10.280

J /22

Run	Time	63Cu	65Cu	66Zn	68Zn	75As	78Se	82Se	83Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	03:54:52	0.509	0.640	1.951	3.350	0.551	0.057	1.788	0.000
2	03:55:01	0.393	0.448	3.520	4.389	0.602	-0.074	-0.135	0.000
3	03:55:11	0.395	0.460	0.886	1.123	0.540	-0.074	0.929	0.000
x		0.432	0.516	2.119	2.954	0.565	-0.030	0.861	0.000
σ		0.066	0.108	1.325	1.669	0.033	0.075	0.963	0.000
%RSD		15.320	20.920 ND	62.530 ND	56.500	5.821	250.400 ND	111.900	0.000

Run	Time	88Sr	89Y	95Mo	98Mo	103Rh	107Ag	109Ag	111Cd
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	03:54:52	105.700	60.107%	2.281	2.309	52.590%	-0.042	-0.055	0.007
2	03:55:01	105.800	59.642%	1.861	2.577	52.776%	-0.017	-0.023	-0.008
3	03:55:11	105.200	59.547%	1.863	2.558	51.891%	-0.057	-0.033	-0.008
x		105.600	59.765%	2.002	2.481	52.419%	-0.039	-0.037	-0.003
σ		0.344	0.300%	0.242	0.149	0.466%	0.020	0.016	0.009
%RSD		0.326	0.501	12.090	6.019	0.890	52.950	ND 44.420	249.700 ND

Run	Time	114Cd	115In	118Sn	121Sb	123Sb	135Ba	137Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	03:54:52	0.010	60.818%	0.697	0.880	1.122	28.130	25.870	69.485%
2	03:55:01	0.015	61.767%	0.750	0.629	0.797	26.780	24.890	69.705%
3	03:55:11	0.010	60.782%	0.607	0.712	0.854	28.420	24.400	69.555%
x		0.012	61.122%	0.685	0.740	0.924	27.780	25.050	69.581%
σ		0.003	0.559%	0.072	0.128	0.174	0.877	0.748	0.112%
%RSD		28.720 ND	0.914	10.530	17.270	18.800	3.158	2.984	0.161

Run	Time	203Tl	205Tl	206Pb	207Pb	208Pb	209Bi
		ppb	ppb	ppb	ppb	ppb	ppb
1	03:54:52	0.087	0.071	0.030	0.026	0.026	71.493%
2	03:55:01	0.057	0.064	0.037	0.011	0.037	71.299%
3	03:55:11	0.080	0.051	0.039	0.024	0.030	71.136%
x		0.074	0.062	0.035	0.020	0.031	71.309%
σ		0.015	0.010	0.005	0.008	0.005	0.179%
%RSD		20.470 ND	16.070	13.910	38.830 ND	17.240	0.251

SECTION 4

CASE NARRATIVE AND CHAIN-OF-CUSTODY RECORD

Sample Summary

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190206_1A

TestAmerica Job ID: 180-86537-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86537-1	JSF-STR-FB01-20190206 FB	Water	02/06/19 12:00	02/08/19 09:00
180-86537-2	JSF-STR-EB01-20190206 EB	Water	02/06/19 12:15	02/08/19 09:00
180-86537-3	JSF-STR-FLB01-20190206 Diss only	Water	02/06/19 12:20	02/08/19 09:00
180-86537-4	JSF-STR-HR07-CC-SUR-20190206	Water	02/06/19 12:30	02/08/19 09:00
180-86537-5	JSF-STR-HR07-LB-SUR-20190206	Water	02/06/19 13:00	02/08/19 09:00
180-86537-6	JSF-STR-HR07-RB-SUR-20190206	Water	02/06/19 13:20	02/08/19 09:00
180-86537-7	JSF-STR-HR08-CC-SUR-20190206	Water	02/06/19 13:50	02/08/19 09:00
180-86537-8	JSF-STR-HR08-LB-SUR-20190206	Water	02/06/19 14:05	02/08/19 09:00
180-86537-9	JSF-STR-HR08-RB-SUR-20190206	Water	02/06/19 14:25	02/08/19 09:00
180-86537-10	JSF-STR-HR09-CC-SUR-20190206	Water	02/06/19 15:05	02/08/19 09:00
180-86537-11	JSF-STR-HR09-RB-SUR-20190206	Water	02/06/19 15:30	02/08/19 09:00
180-86537-12	JSF-STR-HR09-LB-SUR-20190206	Water	02/06/19 15:55	02/08/19 09:00
180-86537-13	JSF-STR-DUP01-20190206	Water	02/06/19 00:00	02/08/19 09:00

Case Narrative

Client: Environmental Standards Inc.
Project/Site: JSF_STR_20190206_1A

TestAmerica Job ID: 180-86537-1

Job ID: 180-86537-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative
180-86537-1

Comments
No additional comments.

Receipt
The samples were received on 2/8/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.1°C, 1.7° C, 2.3° C and 2.3° C.

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

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

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

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 4
COC No:	JSF_STR_20190206_1A
1 of 1 Pages	
Task Desc:	JSF_STR

180-86537 Chain of Custody

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive RIDC Park Pittsburgh, PA 15238
Lab Manager Contact Information	
Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	JOHN SEVIER FOSSIL PLANT		
Project #:	0779777		
Site Address	611 Old Highway 70 S		
City	Rogersville	State, Zip:	TN 37857
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler: Tyler Baker			
Sampling Company: TVA			
Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415			
City/State: Chattanooga, TN		Phone:	423-876-6733
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@pxusld.com		

Analysis Turnaround Time

☐ CALENDAR DAYS ☑ WORKING DAYS

TAT if different from Below _____

☐ 24 Hours
☐ 3 Business Days
☐ 5 Business Days
☑ 10 Business Days (Standard)

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth Start Depth (Depth Unit: Meters)	Sample Depth End Depth (Depth Unit: Meters)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis SW	Analysis SW_FLB	Preserve (see comments)	Lab comments
1	JSF-STR-FB01-20190206	NA	NA	NA	AQ	G	FB	2/6/2019	1200	5		☐		X		
2	JSF-STR-EB01-20190206	NA	NA	NA	AQ	G	EB	2/6/2019	1215	5		☐		X		
3	JSF-STR-FLB01-20190206	NA	NA	NA	AQ	G	FLB	2/6/2019	1220	1		☐		X		
4	JSF-STR-HR07-CC-SUR-20190206	HR07	0.3	NA	SW	G	N	2/6/2019	1230	6		☐	X			
5	JSF-STR-HR07-LB-SUR-20190206	HR07	0.1	NA	SW	G	N	2/6/2019	1300	6		☐	X			
6	JSF-STR-HR07-RB-SUR-20190206	HR07	0.3	NA	SW	G	N	2/6/2019	1320	6		☐	X			
7	JSF-STR-HR08-CC-SUR-20190206	HR08	1.0	NA	SW	G	N	2/6/2019	1350	6		☐	X			
8	JSF-STR-HR08-LB-SUR-20190206	HR08	0.3	NA	SW	G	N	2/6/2019	1405	6		☐	X			
9	JSF-STR-HR08-RB-SUR-20190206	HR08	0.4	NA	SW	G	N	2/6/2019	1425	14	MS/MSD	☑	X			
10	JSF-STR-HR09-CC-SUR-20190206	HR09	0.5	NA	SW	G	N	2/6/2019	1505	6		☐	X			
11	JSF-STR-HR09-RB-SUR-20190206	HR09	1.0	NA	SW	G	N	2/6/2019	1530	14	MS/MSD	☑	X			
12	JSF-STR-HR09-LB-SUR-20190206	HR09	0.3	NA	SW	G	N	2/6/2019	1555	6		☐	X			
13	JSF-STR-DUP01-20190206	NA	NA	NA	SW	G	FD	2/6/2019	NA	6		☐	X			

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SW: Anions, TSS, TDS - unpreserved
Metals - preserved w/HNO3 to pH < 2

SW_FLB: Metals – preserved w/ HNO3 to pH<2

Custody Seals 6437411 – 6437414

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Tyler Baker / TVA	2-7-19	1200	[illegible]	2/8/19	1100

SHIPPING METHOD	SAMPLER NAME AND SIGNATURE
FedEX	Tyler Baker Tyler Baker

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Form TVA 30857A

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 4
COC No:	JSF_STR_20190206_1A
1 of 1 Pages	
Task Desc:	JSF_STR

180-86537 Chain of Custody

Required Ship to Lab:

Lab Name: TestAmerica Pittsburgh
Lab Address: 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM: Gail Lage
Phone/Fax: 615-301-5741/615-726-3404
Lab Email: Gail.Lage@testamericainc.com

Required Project Information:

Site ID #: JOHN SEVIER FOSSIL PLANT
Project #: 0779777
Site Address: 611 Old Highway 70 S
City: Rogersville State, Zip: TN 37857
Site PM Name: Roy Quinn
Phone/Fax: 423-751-3753
Site PM Email: rquinn@tva.gov

Required Sampler Information

Sampler: Tyler Baker
Sampling Company: TVA
Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415
City/State: Chattanooga, TN Phone: 423-874-6733
Sampling Team Number: 1
Send EDD/Hard Copy to: tva_delivery@testamericainc.com

Analysis Turnaround Time

☐ CALENDAR DAYS ☑ WORKING DAYS

TAT if different from below

☐ 24 Hours
☐ 3 Business Days
☐ 5 Business Days
☑ 10 Business Days (Standard)

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth Start Depth (Depth Unit: Meters)	Sample Depth End Depth (Depth Unit: Meters)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SW	Analysis: SW_FLB	Analysis: SW_FIELD/MKS
1	JSF-STR-FB01-20190206	NA	NA	NA	AQ	G	FB	2/6/2019	1200	5		☐		X	X
2	JSF-STR-EB01-20190206	NA	NA	NA	AQ	G	EB	2/6/2019	1215	5		☐		X	X
3	JSF-STR-FLB01-20190206	NA	NA	NA	AQ	G	FLB	2/6/2019	1220	1		☐		X	
4	JSF-STR-HR07-CC-SUR-20190206	HR07	0.3	NA	SW	G	N	2/6/2019	1230	6		☐	X		
5	JSF-STR-HR07-LB-SUR-20190206	HR07	0.1	NA	SW	G	N	2/6/2019	1300	6		☐	X		
6	JSF-STR-HR07-RB-SUR-20190206	HR07	0.3	NA	SW	G	N	2/6/2019	1320	6		☐	X		
7	JSF-STR-HR08-CC-SUR-20190206	HR08	1.0	NA	SW	G	N	2/6/2019	1350	6		☐	X		
8	JSF-STR-HR08-LB-SUR-20190206	HR08	0.3	NA	SW	G	N	2/6/2019	1405	6		☐	X		
9	JSF-STR-HR08-RB-SUR-20190206	HR08	0.4	NA	SW	G	N	2/6/2019	1425	14	MS/MSD	☑	X		
10	JSF-STR-HR09-CC-SUR-20190206	HR09	0.5	NA	SW	G	N	2/6/2019	1505	6		☐	X		
11	JSF-STR-HR09-RB-SUR-20190206	HR09	1.0	NA	SW	G	N	2/6/2019	1530	14	MS/MSD	☑	X		
12	JSF-STR-HR09-LB-SUR-20190206	HR09	0.3	NA	SW	G	N	2/6/2019	1555	6		☐	X		
13	JSF-STR-DUP01-20190206	NA	NA	NA	SW	G	FD	2/6/2019	NA	6		☐	X		

Preservation: SW: HNO3

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SW: Anions, TSS, TDS - unpreserved
Metals - preserved w/HNO3 to pH < 2

SW_FLB: Metals – preserved w/ HNO3 to pH<2

Custody Seals 6413741 – 6413744

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Tyler Baker / TVA	2-7-19	1200	[illegible]	2/7/19	1200

SHIPPING METHOD	SAMPLER NAME AND SIGNATURE
FedEx	Tyler Baker Tyler Baker

Sample Receipt Conditions: Temperature in °C; Sample on ice? ☐ Yes ☐ No; Sample intact? ☐ Yes ☐ No; Trip Blank? ☐ Yes ☐ No

Form TVA 33067A

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-86537-1

Login Number: 86537
List Number: 1
Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

SECTION 5

PROJECT CORRESPONDENCE

Caroline Rowshan

From: Lage, Gail <Gail.Lage@testamericainc.com>
Sent: Wednesday, March 20, 2019 11:28 AM
To: Andrew Piasecki; CSO – TVA Projects
Cc: Amanda Cover; Caroline Rowshan; TVA_Deliverables
Subject: RE: JSF STR - Request for Job 180-86537-1
Attachments: thermo internal.pdf

Andrew – see attached. This should be for any samples on the Thermo's. (instrument X or M)

Thanks

Gail Lage

Phone: 615-301-5741

E-mail: Gail.Lage@testamericainc.com

From: Andrew Piasecki [mailto:apiasecki@envstd.com]
Sent: Tuesday, March 19, 2019 3:20 PM
To: CSO – TVA Projects
Cc: Amanda Cover; Caroline Rowshan; TVA_Deliverables
Subject: JSF STR - Request for Job 180-86537-1

-External Email-

Hi Gail,

For Job 180-86537-1, can you please provide the ICP/MS internal standard analyte associations for Instrument X for the samples analyzed in the sequence on 2/19/19 at 15:27 to 2/20/19 at 6:10.

Thanks!

Andrew L. Piasecki
Quality Assurance Chemist
Environmental Standards, Inc.
1140 Valley Forge Road • PO Box 810 • Valley Forge, PA 19482
610.935.5577 ext. 433 • www.envstd.com • apiasecki@envstd.com

Emergency Response Quality Assurance Hotline: 855.374.7272

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Li6: Lithium, Beryllium, and Boron
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Rh103: Arsenic, Selenium, Strontium, Molybdenum, and Silver
In115: Cadmium, Tin, and Antimony
Tb159: Barium
Bi209: Thallium and Lead

Soils

H_2O all the same as above
except: As, Se & Sr use Y89 instead of Rh103