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This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of the:

Data Verification was performed in accordance with the Tennessee Valley Authority . 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 US EPA, SW-846, and 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 US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Anayte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Unit

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	
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.”
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
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.

Q	Chemical Preservation issue.
RL	Reported Results between the MDL and RL.
T	Temperature preservation issue.
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.

TVA TDEC Program
Facility: Kingston Fossil Plant Environmental Investigation
SDG: AOH1053460-0

Lab Sample ID	10474248
Sys Sample Code	KIF-BS-BG07-0.0/0.5-20190312
Sample Name	KIF-BS-BG07-0.0/0.5-20190312
Sample Date	3/12/2019 4:30:00 PM
Location	BG-07
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
PLM		%ASH	N	%	1				1		Y	Yes	1	NA

Lab Sample ID	10474249
Sys Sample Code	KIF-BS-BG03-0.0/0.5-20190313
Sample Name	KIF-BS-BG03-0.0/0.5-20190313
Sample Date	3/13/2019 4:32:00 PM
Location	BG-03
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
PLM		%ASH	N	%	2				1		Y	Yes	1	NA

TVA TDEC Program
Facility: Kingston Fossil Plant Environmental Investigation
SDG: AOH1053460-0

Lab Sample ID	10474250
Sys Sample Code	KIF-BS-BG02-0.0/0.5-20190314
Sample Name	KIF-BS-BG02-0.0/0.5-20190314
Sample Date	3/14/2019 4:00:00 PM
Location	BG-02
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
PLM		%ASH	N	%	4				1		Y	Yes	1	NA

TVA TDEC Program
Facility: Kingston Fossil Plant Environmental Investigation
SDG: AOH1053460-0

Lab Sample ID	10474251
Sys Sample Code	KIF-BS-BG05-0.0/0.5-20190318
Sample Name	KIF-BS-BG05-0.0/0.5-20190318
Sample Date	3/18/2019 2:50:00 PM
Location	BG-05
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
PLM		%ASH	N	%	2				1		Y	Yes	1	NA

Lab Sample ID	10474252
Sys Sample Code	KIF-BS-BG04-0.0/0.5-20190319
Sample Name	KIF-BS-BG04-0.0/0.5-20190319
Sample Date	3/19/2019 11:58:00 AM
Location	BG-04
Sample Type	N
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
PLM		%ASH	N	%		U			1		N	Yes	1	NA

TVA TDEC Program
Facility: Kingston Fossil Plant Environmental Investigation
SDG: AOH1053460-0

Lab Sample ID	10474253
Sys Sample Code	KIF-BS-BG11-0.0/0.5-20190322
Sample Name	KIF-BS-BG11-0.0/0.5-20190322
Sample Date	3/22/2019 9:55:00 AM
Location	BG-11
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
PLM		%ASH	N	%	2				1		Y	Yes	1	NA

Lab Sample ID	10474254
Sys Sample Code	KIF-BS-BG10-0.0/0.5-20190325
Sample Name	KIF-BS-BG10-0.0/0.5-20190325
Sample Date	3/25/2019 4:35:00 PM
Location	BG-10
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
PLM		%ASH	N	%	4				1		Y	Yes	1	NA

TVA TDEC Program
Facility: Kingston Fossil Plant Environmental Investigation
SDG: AOH1053460-0

Lab Sample ID	10474255
Sys Sample Code	KIF-BS-BG08-0.0/0.5-20190326
Sample Name	KIF-BS-BG08-0.0/0.5-20190326
Sample Date	3/26/2019 11:41:00 AM
Location	BG-08
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
PLM		%ASH	N	%	3				1		Y	Yes	1	NA

Lab Sample ID	10474256
Sys Sample Code	KIF-BS-BG09-0.0/0.5-20190326
Sample Name	KIF-BS-BG09-0.0/0.5-20190326
Sample Date	3/26/2019 3:20:00 PM
Location	BG-09
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
PLM		%ASH	N	%	5				1		Y	Yes	1	NA

TVA TDEC Program
Facility: Kingston Fossil Plant Environmental Investigation
SDG: AOH1053460-0

Lab Sample ID	10474257
Sys Sample Code	KIF-BS-BG12-0.0/0.5-20190327
Sample Name	KIF-BS-BG12-0.0/0.5-20190327
Sample Date	3/27/2019 1:56:00 PM
Location	BG-12
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
PLM		%ASH	N	%	4				1		Y	Yes	1	NA

Lab Sample ID	10474258
Sys Sample Code	KIF-BS-BG01-0.0/0.5-20190328
Sample Name	KIF-BS-BG01-0.0/0.5-20190328
Sample Date	3/28/2019 12:16:00 PM
Location	BG-01
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
PLM		%ASH	N	%	3				1		Y	Yes	1	NA

Lab Sample ID	10474259
Sys Sample Code	KIF-BS-DUP03-20190326
Sample Name	KIF-BS-DUP03-20190326
Sample Date	3/26/2019 12:00:00 AM
Location	BG-09
Sample Type	FD
Parent Sample	KIF-BS-BG09-0.0/0.5-20190326

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
PLM		%ASH	N	%	3				1		Y	Yes	1	NA