eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-90566-1
Client Project/Site: JOF_BS_20190522_1B

For:
Environmental Standards Inc.
1140 Valley Forge Road
PO BOX 810
Valley Forge, Pennsylvania 19482-0810

Attn: Amanda Cover

Authorized for release by:
7/1/2019 10:18:27 AM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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

PA Lab ID: 02-00416

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Job ID: 180-90566-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-90566-1

Comments
No additional comments.

Receipt
The samples were received on 5/25/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 1.5º C, 1.7º C, 2.0º C, 2.1º C and 2.1º C.

RAD
Method(s) 901.1: Gamma Prep Batch 160-430195
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Ac-228	Ra-228
Bi-214	Ra-226

JOF-BS-FB01-20190522 (180-90566-6), JOF-BS-EB01-20190523 (180-90566-16), JOF-BS-FB01-20190523 (180-90566-17), (LCS 160-430195/2-A), (MB 160-430195/1-A) and (180-90566-A-6-B DU)

Method(s) 901.1: Gamma Prep Batch 160-430450
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Ac-228	Ra-228
Bi-214	Ra-226

JOF-BS-BG02-0.0/2.2-20190522 (180-90566-1), JOF-BS-BG02-6.5/8.5-20190522 (180-90566-2), JOF-BS-BG02-11.5/13.5-20190522 (180-90566-3), JOF-BS-BG02-16.5/18.5-20190522 (180-90566-4), JOF-BS-BG02-21.5/23.5-20190522 (180-90566-5), JOF-BS-BG08-1.5/3.5-20190522 (180-90566-7), JOF-BS-BG08-6.5/8.5-20190522 (180-90566-8), JOF-BS-BG08-11.5/13.5-20190522 (180-90566-9), JOF-BS-BG08-15.0/17.0-20190522 (180-90566-10), JOF-BS-BG11-1.5/3.5-20190523 (180-90566-11), JOF-BS-BG11-6.5/8.5-20190523 (180-90566-12), JOF-BS-BG10-1.5/3.5-20190523 (180-90566-13), JOF-BS-BG10-6.5/8.5-20190523 (180-90566-14), JOF-BS-BG10-11.5/13.5-20190523 (180-90566-15), (LCS 160-430450/2-A), (MB 160-430450/1-A) and (180-90566-A-1-C DU)

Method(s) Fill_Geo-21: Gamma Prep Batch 160-430450: Samples are powdery dirt with low density. JOF-BS-BG10-6.5/8.5-20190523 (180-90566-14) and JOF-BS-BG10-11.5/13.5-20190523 (180-90566-15)

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

General Chemistry

Job ID: 180-90566-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

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

Definitions/Glossary

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

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

Accreditation/Certification Summary

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-19
California	State		2891	04-30-20
California	State Program	9	2891	04-30-20
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Florida	NELAP		E871008	06-30-19
Illinois	NELAP	5	200005	06-30-20
Kansas	NELAP	7	E-10350	01-31-20
Kentucky (UST)	State Program	4	162013	04-30-20
Kentucky (WW)	State Program	4	KY98043	12-31-19
Louisiana	NELAP	6	04041	06-30-19
Nevada	State		PA00164	07-31-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-20
New Jersey	NELAP	2	PA005	06-30-19
New Jersey	NELAP		PA005	06-30-19 *
New York	NELAP	2	11182	03-31-20
New York	NELAP		11182	04-01-20
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	02-06-20
Oregon	NELAP		PA-2151	02-06-20
Pennsylvania	NELAP	3	02-00416	04-30-20
Pennsylvania	NELAP		02-00416	04-30-20
Rhode Island	State Program	1	LAO00362	12-30-19
South Carolina	State Program	4	89014	04-30-20
Texas	NELAP	6	T104704528-15-2	03-31-20
Texas	NELAP		T104704528	03-31-20
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
US Fish & Wildlife	US Federal Programs		058448	07-31-20
USDA	Federal		P-Soil-01	06-26-22
USDA	US Federal Programs		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19 *
Virginia	NELAP	3	460189	09-14-19
Virginia	NELAP		10043	09-14-19
West Virginia DEP	State		142	01-31-20
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State		998027800	08-31-19
Wisconsin	State Program	5	998027800	08-31-19

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

Accreditation/Certification Summary

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	Dept. of Defense ELAP		L2305	04-06-22
ANAB	DoD		L2305	04-06-22
ANAB	DOE		L2305.01	04-06-22
Arizona	State		AZ0813	12-08-19
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19 *
Connecticut	State Program	1	PH-0241	03-31-21
Florida	NELAP	4	E87689	06-30-19 *
Hawaii	State Program	9	NA	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-20
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19 *
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19 *
Nevada	State Program	9	MO000542018-1	07-31-19 *
New Jersey	NELAP	2	MO002	06-30-20
New York	NELAP	2	11616	03-31-20
New York	NELAP		11616	04-01-20
North Dakota	State Program	8	R207	06-30-19 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State		9997	08-31-19
Oklahoma	State Program	6	9997	08-31-19 *
Pennsylvania	NELAP	3	68-00540	02-28-20
Pennsylvania	NELAP		68-00540	02-28-20
South Carolina	State Program	4	85002001	06-30-19 *
Texas	NELAP	6	T104704193-18-13	07-31-19 *
Texas	NELAP		T104704193-19-13	07-31-20
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19 *
Virginia	NELAP	3	460230	06-14-20
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

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

Sample Summary

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-90566-1	JOF-BS-BG02-0.0/2.2-20190522	Solid	05/22/19 11:48	05/25/19 09:30	
180-90566-2	JOF-BS-BG02-6.5/8.5-20190522	Solid	05/22/19 12:06	05/25/19 09:30	
180-90566-3	JOF-BS-BG02-11.5/13.5-20190522	Solid	05/22/19 12:23	05/25/19 09:30	
180-90566-4	JOF-BS-BG02-16.5/18.5-20190522	Solid	05/22/19 12:39	05/25/19 09:30	
180-90566-5	JOF-BS-BG02-21.5/23.5-20190522	Solid	05/22/19 13:04	05/25/19 09:30	
180-90566-6	JOF-BS-FB01-20190522	Water	05/22/19 14:05	05/25/19 09:30	
180-90566-7	JOF-BS-BG08-1.5/3.5-20190522	Solid	05/22/19 15:03	05/25/19 09:30	
180-90566-8	JOF-BS-BG08-6.5/8.5-20190522	Solid	05/22/19 15:18	05/25/19 09:30	
180-90566-9	JOF-BS-BG08-11.5/13.5-20190522	Solid	05/22/19 15:38	05/25/19 09:30	
180-90566-10	JOF-BS-BG08-15.0/17.0-20190522	Solid	05/22/19 15:55	05/25/19 09:30	
180-90566-11	JOF-BS-BG11-1.5/3.5-20190523	Solid	05/23/19 12:30	05/25/19 09:30	
180-90566-12	JOF-BS-BG11-6.5/8.5-20190523	Solid	05/23/19 12:42	05/25/19 09:30	
180-90566-13	JOF-BS-BG10-1.5/3.5-20190523	Solid	05/23/19 13:52	05/25/19 09:30	
180-90566-14	JOF-BS-BG10-6.5/8.5-20190523	Solid	05/23/19 14:09	05/25/19 09:30	
180-90566-15	JOF-BS-BG10-11.5/13.5-20190523	Solid	05/23/19 14:32	05/25/19 09:30	
180-90566-16	JOF-BS-EB01-20190523	Water	05/23/19 15:04	05/25/19 09:30	
180-90566-17	JOF-BS-FB02-20190523	Water	05/23/19 15:10	05/25/19 09:30	

Method Summary

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Method	Method Description	Protocol	Laboratory
901.1	Radium-226 & Other Gamma Emitters (GS)	EPA	TAL SL
Dry and Grind	Preparation, Dry and Grind	None	TAL SL
Fill_Geo-21	Fill Geometry, 21-Day In-Growth	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency
None = None

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG02-0.0/2.2-20190522 — Lab Sample ID: 180-90566-1

Date Collected: 05/22/19 11:48 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			232.7 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432702	06/25/19 15:42	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG02-6.5/8.5-20190522 — Lab Sample ID: 180-90566-2

Date Collected: 05/22/19 12:06 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			268.4 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432468	06/24/19 19:22	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG02-11.5/13.5-20190522 — Lab Sample ID: 180-90566-3

Date Collected: 05/22/19 12:23 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			275.5 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432464	06/24/19 19:23	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG02-16.5/18.5-20190522 — Lab Sample ID: 180-90566-4

Date Collected: 05/22/19 12:39 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			340.9 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432458	06/24/19 22:08	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG02-21.5/23.5-20190522 — Lab Sample ID: 180-90566-5

Date Collected: 05/22/19 13:04 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			358.5 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432459	06/24/19 22:05	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-FB01-20190522 — Lab Sample ID: 180-90566-6

Date Collected: 05/22/19 14:05 — **Matrix: Water**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			1000 mL	1.0 mL	430195	05/30/19 03:25	SJS	TAL SL
Total/NA	Analysis	901.1		1			432465	06/24/19 06:46	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG08-1.5/3.5-20190522 — Lab Sample ID: 180-90566-7

Date Collected: 05/22/19 15:03 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			225.4 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432466	06/24/19 22:08	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG08-6.5/8.5-20190522 — Lab Sample ID: 180-90566-8

Date Collected: 05/22/19 15:18 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			275.8 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432468	06/24/19 22:09	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG08-11.5/13.5-20190522 — Lab Sample ID: 180-90566-9

Date Collected: 05/22/19 15:38 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			287.5 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432464	06/24/19 22:08	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG08-15.0/17.0-20190522 — Lab Sample ID: 180-90566-10

Date Collected: 05/22/19 15:55 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			305.2 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432702	06/25/19 07:04	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG11-1.5/3.5-20190523 — Lab Sample ID: 180-90566-11

Date Collected: 05/23/19 12:30 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			307.3 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432703	06/25/19 06:59	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG11-6.5/8.5-20190523 — Lab Sample ID: 180-90566-12

Date Collected: 05/23/19 12:42 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			306.5 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432709	06/25/19 07:05	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG10-1.5/3.5-20190523 — Lab Sample ID: 180-90566-13

Date Collected: 05/23/19 13:52 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			217.2 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432707	06/25/19 07:06	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG10-6.5/8.5-20190523 — Lab Sample ID: 180-90566-14

Date Collected: 05/23/19 14:09 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			147.3 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432706	06/25/19 07:06	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JOF-BS-BG10-11.5/13.5-20190523 — Lab Sample ID: 180-90566-15

Date Collected: 05/23/19 14:32 — **Matrix: Solid**
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			1.0 g	1.0 g	430158	05/29/19 14:12	DRO	TAL SL
Total/NA	Prep	Fill_Geo-21			162.4 g	1.0 g	430450	05/31/19 14:56	KRS	TAL SL
Total/NA	Analysis	901.1		1			432708	06/25/19 07:08	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-EB01-20190523

Lab Sample ID: 180-90566-16
Date Collected: 05/23/19 15:04
Matrix: Water
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			1000 mL	1.0 mL	430195	05/30/19 03:25	SJS	TAL SL
Total/NA	Analysis	901.1		1			432463	06/24/19 06:49	KLS	TAL SL
	Instrument ID: GAMMAVISION									

Client Sample ID: JOF-BS-FB02-20190523

Lab Sample ID: 180-90566-17
Date Collected: 05/23/19 15:10
Matrix: Water
Date Received: 05/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			1000 mL	1.0 mL	430195	05/30/19 03:25	SJS	TAL SL
Total/NA	Analysis	901.1		1			432460	06/23/19 22:09	KLS	TAL SL
	Instrument ID: GAMMAVISION									

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL SL
- Batch Type: Leach
  - DRO = David Oetter
- Batch Type: Prep
  - KRS = Kurt Slama
  - SJS = Sean Small
- Batch Type: Analysis
  - KLS = Kody Saulters

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG02-0.0/2.2-20190522

Lab Sample ID: 180-90566-1

Date Collected: 05/22/19 11:48
Date Received: 05/25/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	3.26		0.436	0.495			pCi/g	05/31/19 14:56	06/25/19 15:42	1
Radium-226	1.62		0.326	0.365	1.00	0.241	pCi/g	05/31/19 14:56	06/25/19 15:42	1
Radium-228	1.64		0.289	0.334		0.162	pCi/g	05/31/19 14:56	06/25/19 15:42	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG02-6.5/8.5-20190522

Lab Sample ID: 180-90566-2

Date Collected: 05/22/19 12:06
Date Received: 05/25/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	2.44		0.420	0.456			pCi/g	05/31/19 14:56	06/24/19 19:22	1
Radium-226	1.22		0.248	0.279	1.00	0.150	pCi/g	05/31/19 14:56	06/24/19 19:22	1
Radium-228	1.22		0.339	0.361		0.438	pCi/g	05/31/19 14:56	06/24/19 19:22	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG02-11.5/13.5-20190522

Lab Sample ID: 180-90566-3

Date Collected: 05/22/19 12:23
Date Received: 05/25/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	2.14		0.410	0.437			pCi/g	05/31/19 14:56	06/24/19 19:23	1
Radium-226	1.08		0.224	0.250	1.00	0.144	pCi/g	05/31/19 14:56	06/24/19 19:23	1
Radium-228	1.06		0.343	0.359		0.243	pCi/g	05/31/19 14:56	06/24/19 19:23	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG02-16.5/18.5-20190522

Lab Sample ID: 180-90566-4

Date Collected: 05/22/19 12:39
Date Received: 05/25/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	1.37		0.238	0.258			pCi/g	05/31/19 14:56	06/24/19 22:08	1
Radium-226	0.733		0.168	0.184	1.00	0.132	pCi/g	05/31/19 14:56	06/24/19 22:08	1
Radium-228	0.636		0.169	0.181		0.110	pCi/g	05/31/19 14:56	06/24/19 22:08	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG02-21.5/23.5-20190522

Lab Sample ID: 180-90566-5

Date Collected: 05/22/19 13:04

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	1.04		0.184	0.199			pCi/g	05/31/19 14:56	06/24/19 22:05	1
Radium-226	0.545		0.131	0.142	1.00	0.105	pCi/g	05/31/19 14:56	06/24/19 22:05	1
Radium-228	0.498		0.129	0.139		0.134	pCi/g	05/31/19 14:56	06/24/19 22:05	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-FB01-20190522

Lab Sample ID: 180-90566-6

Date Collected: 05/22/19 14:05

Matrix: Water

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-5.06	U	22.8	22.8	50.0	39.1	pCi/L	05/30/19 03:25	06/24/19 06:46	1
Radium-228	**21.8**		16.5	16.6	50.0	18.7	pCi/L	05/30/19 03:25	06/24/19 06:46	1
Radium 226 and 228 (positive only)	21.8	U	16.5	16.6			pCi/L	05/30/19 03:25	06/24/19 06:46	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG08-1.5/3.5-20190522

Lab Sample ID: 180-90566-7

Date Collected: 05/22/19 15:03

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	2.50		0.544	0.574			pCi/g	05/31/19 14:56	06/24/19 22:08	1
Radium-226	1.14		0.240	0.268	1.00	0.160	pCi/g	05/31/19 14:56	06/24/19 22:08	1
Radium-228	1.36		0.488	0.508		0.421	pCi/g	05/31/19 14:56	06/24/19 22:08	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG08-6.5/8.5-20190522

Lab Sample ID: 180-90566-8

Date Collected: 05/22/19 15:18

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	2.58		0.464	0.502			pCi/g	05/31/19 14:56	06/24/19 22:09	1
Radium-226	1.06		0.250	0.274	1.00	0.232	pCi/g	05/31/19 14:56	06/24/19 22:09	1
Radium-228	1.52		0.391	0.421		0.182	pCi/g	05/31/19 14:56	06/24/19 22:09	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG08-11.5/13.5-20190522

Lab Sample ID: 180-90566-9

Date Collected: 05/22/19 15:38
Date Received: 05/25/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	1.84		0.318	0.345			pCi/g	05/31/19 14:56	06/24/19 22:08	1
Radium-226	0.818		0.213	0.229	1.00	0.171	pCi/g	05/31/19 14:56	06/24/19 22:08	1
Radium-228	1.02		0.236	0.258		0.157	pCi/g	05/31/19 14:56	06/24/19 22:08	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG08-15.0/17.0-20190522

Lab Sample ID: 180-90566-10

Date Collected: 05/22/19 15:55

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	1.38		0.394	0.407			pCi/g	05/31/19 14:56	06/25/19 07:04	1
Radium-226	0.828		0.194	0.212	1.00	0.161	pCi/g	05/31/19 14:56	06/25/19 07:04	1
Radium-228	0.552		0.343	0.348		0.347	pCi/g	05/31/19 14:56	06/25/19 07:04	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG11-1.5/3.5-20190523

Lab Sample ID: 180-90566-11

Date Collected: 05/23/19 12:30

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	1.27		0.253	0.270			pCi/g	05/31/19 14:56	06/25/19 06:59	1
Radium-226	0.578		0.133	0.146	1.00	0.104	pCi/g	05/31/19 14:56	06/25/19 06:59	1
Radium-228	0.689		0.215	0.227		0.156	pCi/g	05/31/19 14:56	06/25/19 06:59	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG11-6.5/8.5-20190523

Lab Sample ID: 180-90566-12

Date Collected: 05/23/19 12:42

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	**1.02**		0.309	0.320			pCi/g	05/31/19 14:56	06/25/19 07:05	1
Radium-226	**0.763**		0.188	0.204	1.00	0.129	pCi/g	05/31/19 14:56	06/25/19 07:05	1
Radium-228	0.261	U	0.245	0.246		0.368	pCi/g	05/31/19 14:56	06/25/19 07:05	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG10-1.5/3.5-20190523

Lab Sample ID: 180-90566-13

Date Collected: 05/23/19 13:52

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	5.29		0.704	0.831			pCi/g	05/31/19 14:56	06/25/19 07:06	1
Radium-226	4.07		0.506	0.660	1.00	0.237	pCi/g	05/31/19 14:56	06/25/19 07:06	1
Radium-228	1.22		0.490	0.505		0.413	pCi/g	05/31/19 14:56	06/25/19 07:06	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG10-6.5/8.5-20190523

Lab Sample ID: 180-90566-14

Date Collected: 05/23/19 14:09

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	21.3		1.45	2.38			pCi/g	05/31/19 14:56	06/25/19 07:06	1
Radium-226	18.3		1.23	2.23	1.00	0.480	pCi/g	05/31/19 14:56	06/25/19 07:06	1
Radium-228	3.04		0.768	0.828		0.744	pCi/g	05/31/19 14:56	06/25/19 07:06	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-BG10-11.5/13.5-20190523

Lab Sample ID: 180-90566-15

Date Collected: 05/23/19 14:32

Matrix: Solid

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228 (positive only)	20.0		1.30	2.30			pCi/g	05/31/19 14:56	06/25/19 07:08	1
Radium-226	18.1		1.03	2.15	1.00	0.452	pCi/g	05/31/19 14:56	06/25/19 07:08	1
Radium-228	1.85		0.792	0.814		1.10	pCi/g	05/31/19 14:56	06/25/19 07:08	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-EB01-20190523

Lab Sample ID: 180-90566-16

Date Collected: 05/23/19 15:04

Matrix: Water

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-13.6	U	15.7	15.8	50.0	36.0	pCi/L	05/30/19 03:25	06/24/19 06:49	1
Radium-228	-8.08	U	26.5	26.5	50.0	33.7	pCi/L	05/30/19 03:25	06/24/19 06:49	1
Radium 226 and 228 (positive only)	0.000	U	0.00000	0.00000			pCi/L	05/30/19 03:25	06/24/19 06:49	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Client Sample ID: JOF-BS-FB02-20190523

Lab Sample ID: 180-90566-17

Date Collected: 05/23/19 15:10

Matrix: Water

Date Received: 05/25/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-9.63	U	22.8	22.9	50.0	39.0	pCi/L	05/30/19 03:25	06/23/19 22:09	1
Radium-228	13.3	U	24.6	24.6	50.0	28.7	pCi/L	05/30/19 03:25	06/23/19 22:09	1
Radium 226 and 228 (positive only)	13.3	U	24.6	24.6			pCi/L	05/30/19 03:25	06/23/19 22:09	1

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-430195/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 432461 — **Prep Batch: 430195**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-13.56	U	16.2	16.3	50.0	36.2	pCi/L	05/30/19 03:25	06/23/19 20:56	1
Radium 226 and 228 (positive only)	0.1940	U	0.436	0.437			pCi/L	05/30/19 03:25	06/23/19 20:56	1
Radium-228	0.1940	U	0.436	0.437	50.0	30.9	pCi/L	05/30/19 03:25	06/23/19 20:56	1

Lab Sample ID: LCS 160-430195/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 432460 — **Prep Batch: 430195**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	136000	132300		15300		298	pCi/L	97	90 - 111
Cesium-137	44500	43640		4370		93.9	pCi/L	98	90 - 111
Cobalt-60	29200	28350		2800		50.8	pCi/L	97	89 - 110

Lab Sample ID: 180-90566-6 DU — **Client Sample ID: JOF-BS-FB01-20190522**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 432462 — **Prep Batch: 430195**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	-5.06	U	-20.75	U	15.8	50.0	48.5	pCi/L	0.41	1
Radium 226 and 228 (positive only)	21.8	U	13.85	U	20.2			pCi/L	0.15	
Radium-228	21.8		13.85	U	20.2	50.0	26.0	pCi/L	0.22	1

Lab Sample ID: MB 160-430450/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 432458 — **Prep Batch: 430450**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.06287	U	0.191	0.191	1.00	0.361	pCi/g	05/31/19 14:56	06/24/19 19:14	1
Radium 226 and 228 (positive only)	0.06832	U	0.167	0.167			pCi/g	05/31/19 14:56	06/24/19 19:14	1
Radium-228	0.06832	U	0.167	0.167		0.230	pCi/g	05/31/19 14:56	06/24/19 19:14	1

Lab Sample ID: LCS 160-430450/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 432459 — **Prep Batch: 430450**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	96.7	94.65		9.90		0.942	pCi/g	98	87 - 116
Cesium-137	27.6	26.19		2.79		0.189	pCi/g	95	87 - 120
Cobalt-60	11.5	10.63		1.11		0.0834	pCi/g	93	87 - 115

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: 180-90566-1 DU
Matrix: Solid
Analysis Batch: 432459

Client Sample ID: JOF-BS-BG02-0.0/2.2-20190522
Prep Type: Total/NA
Prep Batch: 430450

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	1.62			1.127		0.231	1.00	0.133	pCi/g			0.83	1
Radium 226 and 228 (positive only)	3.26			2.589		0.384			pCi/g			0.76	
Radium-228	1.64			1.462		0.307		0.217	pCi/g			0.28	1

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: JOF_BS_20190522_1B

Job ID: 180-90566-1

Rad

Leach Batch: 430158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90566-1	JOF-BS-BG02-0.0/2.2-20190522	Total/NA	Solid	Dry and Grind	
180-90566-2	JOF-BS-BG02-6.5/8.5-20190522	Total/NA	Solid	Dry and Grind	
180-90566-3	JOF-BS-BG02-11.5/13.5-20190522	Total/NA	Solid	Dry and Grind	
180-90566-4	JOF-BS-BG02-16.5/18.5-20190522	Total/NA	Solid	Dry and Grind	
180-90566-5	JOF-BS-BG02-21.5/23.5-20190522	Total/NA	Solid	Dry and Grind	
180-90566-7	JOF-BS-BG08-1.5/3.5-20190522	Total/NA	Solid	Dry and Grind	
180-90566-8	JOF-BS-BG08-6.5/8.5-20190522	Total/NA	Solid	Dry and Grind	
180-90566-9	JOF-BS-BG08-11.5/13.5-20190522	Total/NA	Solid	Dry and Grind	
180-90566-10	JOF-BS-BG08-15.0/17.0-20190522	Total/NA	Solid	Dry and Grind	
180-90566-11	JOF-BS-BG11-1.5/3.5-20190523	Total/NA	Solid	Dry and Grind	
180-90566-12	JOF-BS-BG11-6.5/8.5-20190523	Total/NA	Solid	Dry and Grind	
180-90566-13	JOF-BS-BG10-1.5/3.5-20190523	Total/NA	Solid	Dry and Grind	
180-90566-14	JOF-BS-BG10-6.5/8.5-20190523	Total/NA	Solid	Dry and Grind	
180-90566-15	JOF-BS-BG10-11.5/13.5-20190523	Total/NA	Solid	Dry and Grind	
180-90566-1 DU	JOF-BS-BG02-0.0/2.2-20190522	Total/NA	Solid	Dry and Grind	

Prep Batch: 430195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90566-6	JOF-BS-FB01-20190522	Total/NA	Water	Fill_Geo-21	
180-90566-16	JOF-BS-EB01-20190523	Total/NA	Water	Fill_Geo-21	
180-90566-17	JOF-BS-FB02-20190523	Total/NA	Water	Fill_Geo-21	
MB 160-430195/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-430195/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	
180-90566-6 DU	JOF-BS-FB01-20190522	Total/NA	Water	Fill_Geo-21	

Prep Batch: 430450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90566-1	JOF-BS-BG02-0.0/2.2-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-2	JOF-BS-BG02-6.5/8.5-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-3	JOF-BS-BG02-11.5/13.5-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-4	JOF-BS-BG02-16.5/18.5-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-5	JOF-BS-BG02-21.5/23.5-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-7	JOF-BS-BG08-1.5/3.5-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-8	JOF-BS-BG08-6.5/8.5-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-9	JOF-BS-BG08-11.5/13.5-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-10	JOF-BS-BG08-15.0/17.0-20190522	Total/NA	Solid	Fill_Geo-21	430158
180-90566-11	JOF-BS-BG11-1.5/3.5-20190523	Total/NA	Solid	Fill_Geo-21	430158
180-90566-12	JOF-BS-BG11-6.5/8.5-20190523	Total/NA	Solid	Fill_Geo-21	430158
180-90566-13	JOF-BS-BG10-1.5/3.5-20190523	Total/NA	Solid	Fill_Geo-21	430158
180-90566-14	JOF-BS-BG10-6.5/8.5-20190523	Total/NA	Solid	Fill_Geo-21	430158
180-90566-15	JOF-BS-BG10-11.5/13.5-20190523	Total/NA	Solid	Fill_Geo-21	430158
MB 160-430450/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	
LCS 160-430450/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	
180-90566-1 DU	JOF-BS-BG02-0.0/2.2-20190522	Total/NA	Solid	Fill_Geo-21	430158

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	1	of	5
COC No:	JOF_BS_20190522_1B		
1 of 2 Pages			
Task Desc:	JOF_BS		

Chain-of-Custody / Analytical Request Document

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

180-90566 Chain of Custody

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Start Depth	Sample Depth: Select Unit / End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD	Preserve: None	Preserve: HNO3
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·	X			
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·	X			
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·	X			
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·	X			
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·	X			
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		X		
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·	X			
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·	X			
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·	X			
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	18'	BS	G	N	5/22/2019	1555	2	None	·	X			
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·	X			
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·	X			
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·	X			

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	930

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

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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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 5
COC No:	JOF_BS_20190522_1B
2 of 2 Pages	
Task Desc:	JOF_BS

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None		N			X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None		N			X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None				X		
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None				X		

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	1700

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	2	of	5
COC No:	JOF_BS_20190522_1B		
1 of 2 Pages			
Task Desc:	JOF_BS		

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit Start Depth	Sample Depth: Select Unit End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL_RAD (Filtered N, Preserve None)	Analysis: BACKGROUNDSOIL_BLANKS_RAD (Filtered N, Preserve HNO3)
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·	X	
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·	X	
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·	X	
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·	X	
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·	X	
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		X
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·	X	
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·	X	
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·	X	
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	18'	BS	G	N	5/22/2019	1555	2	None	·	X	
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·	X	
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·	X	
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·	X	

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	9:00

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

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

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

COOLER No.:	2 of 5
COC No:	JOF_BS_20190522_1B
	2 of 2 Pages
Task Desc:	JOF_BS

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth	Sample Depth: End Depth (Depth Unit / Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered N	Filtered N	Preserve None	Preserve HNO3	Analysis BACKGROUNDSOIL_RAD	Analysis BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None	▪					X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None	▪					X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None	▪				X		
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None	▪				X		

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	1730

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	3	of	5
COC No:	JOF_BS_20190522_1B		
1 of 2 Pages			
Task Desc:	JOF_BS		

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·					X	
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·					X	
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·					X	
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·					X	
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·					X	
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·				X		
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·					X	
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·					X	
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·					X	
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	18'	BS	G	N	5/22/2019	1555	2	None	·					X	
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·					X	
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·					X	
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·					X	

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	3	of	5
COC No:	JOF_BS_20190522_1B		
2 of 2 Pages			
Task Desc:	JOF_BS		

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth	Sample Depth: End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None	•					X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None	•					X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None	•						X
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None	•						X

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	9:25

Sample Receipt Conditions			
• 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
Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

Form TVA 30067A

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.:	4 of 5
COC No:	JOF_BS_20190522_1B
	1 of 2 Pages
Task Desc:	JOF_BS

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Start Depth	Sample Depth: Select Unit / End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·					X	
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·					X	
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·					X	
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·					X	
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·					X	
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		X				
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·					X	
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·					X	
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·					X	
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	18'	BS	G	N	5/22/2019	1555	2	None	·					X	
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·					X	
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·					X	
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·					X	

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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

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TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	4	of	5
COC No:	JOF_BS_20190522_1B		
2 of 2 Pages			
Task Desc:	JOF_BS		

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth	Sample Depth: End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None	•					X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None	•					X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None	•						X
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None	•						X

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/25/19	930

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

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	5	of	5
COC No:	JOF_BS_20190522_1B		
1 of 2 Pages			
Task Desc:	JOF_BS		

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Start Depth	Sample Depth: Select Unit / End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL_RAD (Filtered N, Preserve None)	Analysis: BACKGROUNDSOIL_BLANKS_RAD (Filtered N, Preserve HNO3)
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·	X	
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·	X	
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·	X	
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·	X	
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·	X	
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		X
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·	X	
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·	X	
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·	X	
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	18'	BS	G	N	5/22/2019	1555	2	None	·	X	
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·	X	
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·	X	
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·	X	

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	1700

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	5	of	5
COC No:	JOF_BS_20190522_1B		
2 of 2 Pages			
Task Desc:	JOF_BS		

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered (N)	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None	•	N			X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None	•	N			X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None	•					X
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None	•					X

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00			

Sample Receipt Conditions			
• 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
Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

Form TVA 30067A

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 5
COC No:	JOF_BS_20190522_1B
	1 of 2 Pages
Task Desc:	JOF_BS

Rev 1 BJ 5/29/19

7/1/2019

180-90566 Chain of Custody

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive 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 #:	Johnsonville Fossil Plant		
Project #:	18020000		
Site Address	535 Steam Plant Road		
City	New Johnsonville	State, Zip:	TN, 37134
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler:	David Webb		
Sampling Company:	Stantec		
Address	601 Grassmere Park Rd. , Suite 22		
City/State	Nashville, TN	Phone:	615-319-6613
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@erosfd.com		

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

☐ 24 Hours
☐ 3 Business Days
☐ 5 Business Days
☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	Start Depth	End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD	Preserve: None	Preserve: HNO3
1	JOF-BS-BG02-0.0/2.2-20190522	BG02			0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·	X			
2	JOF-BS-BG02-6.5/8.5-20190522	BG02			6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·	X			
3	JOF-BS-BG02-11.5/13.5-20190522	BG02			11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·	X			
4	JOF-BS-BG02-16.5/18.5-20190522	BG02			16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·	X			
5	JOF-BS-BG02-21.5/23.5-20190522	BG02			21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·	X			
6	JOF-BS-FB01-20190522	BG02			NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		X		
7	JOF-BS-BG08-1.5/3.5-20190522	BG08			1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·	X			
8	JOF-BS-BG08-6.5/8.5-20190522	BG08			6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·	X			
9	JOF-BS-BG08-11.5/13.5-20190522	BG08			11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·	X			
10	JOF-BS-BG08-15.0/17.0-20190522	BG08			15'	~~16'~~ 17'	BS	G	N	5/22/2019	1555	2	None	·	X			
11	JOF-BS-BG11-1.5/3.5-20190523	BG11			1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·	X			
12	JOF-BS-BG11-6.5/8.5-20190523	BG11			6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·	X			
13	JOF-BS-BG12-1.5/3.5-20190523	BG12			1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·	X			

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

BJ 05/29/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	1730

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	1	of	5
COC No:	JOF_BS_20190522_1B		
2 of 2 Pages			
Task Desc:	JOF_BS		

RW1 BJ 5/29/19

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd., Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered N	Preserve None	Preserve HNO3	Analysis BACKGROUNDSOIL_RAD	Analysis BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None					X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None					X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None						X
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None						X

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

FB02

BJ 5/29/19

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/24/19	9:30

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30087A

7/1/2019

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

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

COOLER No.:	2 of 5
COC No:	JOF_BS_20190522_1B
	1 of 2 Pages
Task Desc:	JOF_BS

Rev 1 BJ 5/29/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive 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 #:	Johnsonville Fossil Plant		
Project #:	16020000		
Site Address	535 Steam Plant Road		
City	New Johnsonville	State, Zip:	TN, 37134
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler:	David Webb		
Sampling Company:	Stantec		
Address	601 Grassmere Park Rd. , Suite 22		
City/State	Nashville, TN	Phone:	615-319-6613
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@enviro.com		

Analysis Turnaround Time

- CALENDAR DAYS
- WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ **10 Business Days**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit Start Depth	Sample Depth: Select Unit End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL_RAD (Filtered N, Preserve None)	Analysis: BACKGROUNDSOIL_BLANKS_RAD (Filtered N, Preserve HNO3)
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·	X	
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·	X	
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·	X	
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·	X	
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·	X	
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		X
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·	X	
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·	X	
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·	X	
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	~~18'~~ 17'	BS	G	N	5/22/2019	1555	2	None	·	X	
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·	X	
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·	X	
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·	X	

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

BJ 5/29/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	0800

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	2	of	5
COC No:	JOF_BS_20190522_1B		
2 of 2 Pages			
Task Desc:	JOF_BS		

Rev 1 BJ 5/29/19

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None		N			X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None		N			X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None						X
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None						X

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

FB02
BJ 5/29/19

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/24/19	0900

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30087A

7/1/2019

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	3	of	5
COC No:	JOF_BS_20190522_1B		
1 of 2 Pages			
Task Desc:	JOF_BS		

Rev 1 BJ 5/29/19

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	rtquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envsta.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·					X	
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·					X	
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·					X	
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·					X	
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·					X	
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·						X
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·					X	
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·					X	
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·					X	
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	18'	BS	G	N	5/22/2019	1555	2	None	·					X	
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·					X	
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·					X	
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·					X	

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

17'

BJ 5/29/17

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/25/19	930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	3 of 5
COC No:	JOF_BS_20190522_1B
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Task Desc:	JOF_BS

Rev 1 5/29/19

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Start Depth	Sample Depth: Select Unit / End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered	Preserve: None	Preserve: HNO3	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None	▪	N			X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None	▪	N			X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None	▪			X		
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None	▪			X		

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

FB02

5/29/19

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	1700

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

Sample Receipt Conditions			
▪ 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
Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	4	of	5
COC No:	JOF_BS_20190522_1B		
1 of 2 Pages			
Task Desc:	JOF_BS		

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7/1/2019

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	rquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envyld.com
Lab Email:	Gail.Lage@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

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Select Unit: Start Depth	End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered	Preserve	Analysis: BACKGROUNDSOIL_RAD	BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·	N	None	X	
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·	N	None	X	
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·	N	None	X	
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·	N	None	X	
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·	N	None	X	
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		HNO3		X
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·	N	None	X	
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·	N	None	X	
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·	N	None	X	
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	18'	BS	G	N	5/22/2019	1555	2	None	·	N	None	X	
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·	N	None	X	
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·	N	None	X	
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·	N	None	X	

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

17'
BJ 5/29/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	4 of 5
COC No:	JOF_BS_20190522_1B
	2 of 2 Pages
Task Desc:	JOF_BS

Rev 1 BJ 5/29/19

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd. , Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6813
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered N	Filtered N	Preserve None	Preserve HNO3	Analysis BACKGROUNDSOIL_RAD	Analysis BACKGROUNDSOIL_BLANKS_RAD
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None	•					X	
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None	•					X	
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None	•						X
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None	•						X

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

FB02 BJ 5/29/19

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

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 30067A

7/1/2019

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.:	5	of	5
COC No:	JOF_BS_20190522_1B		
1 of 2 Pages			
Task Desc:	JOF_BS		

Rev 1 BJ 5/29/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive 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 #:	Johnsonville Fossil Plant		
Project #:	18020000		
Site Address	535 Steam Plant Road		
City	New Johnsonville	State, Zip:	TN, 37134
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rjquinn@tva.gov		

Required Sampler Information

Sampler:	David Webb		
Sampling Company:	Stantec		
Address	601 Grassmere Park Rd. , Suite 22		
City/State	Nashville, TN	Phone:	615-319-6613
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@erusts.com		

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

☐ 24 Hours
☐ 3 Business Days
☐ 5 Business Days
☑ **10 Business Days**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3
1	JOF-BS-BG02-0.0/2.2-20190522	BG02	0.0'	2.2'	BS	G	N	5/22/2019	1148	2	None	·	X					
2	JOF-BS-BG02-6.5/8.5-20190522	BG02	6.5'	8.5'	BS	G	N	5/22/2019	1206	2	None	·	X					
3	JOF-BS-BG02-11.5/13.5-20190522	BG02	11.5'	13.5'	BS	G	N	5/22/2019	1223	2	None	·	X					
4	JOF-BS-BG02-16.5/18.5-20190522	BG02	16.5'	18.5'	BS	G	N	5/22/2019	1239	2	None	·	X					
5	JOF-BS-BG02-21.5/23.5-20190522	BG02	21.5'	23.5'	BS	G	N	5/22/2019	1304	2	None	·	X					
6	JOF-BS-FB01-20190522	BG02	NA	NA	AQ	G	FB	5/22/2019	1405	3	None	·		X				
7	JOF-BS-BG08-1.5/3.5-20190522	BG08	1.5'	3.5'	BS	G	N	5/22/2019	1503	2	None	·	X					
8	JOF-BS-BG08-6.5/8.5-20190522	BG08	6.5'	8.5'	BS	G	N	5/22/2019	1518	2	None	·	X					
9	JOF-BS-BG08-11.5/13.5-20190522	BG08	11.5'	13.5'	BS	G	N	5/22/2019	1538	2	None	·	X					
10	JOF-BS-BG08-15.0/17.0-20190522	BG08	15'	~~18'~~ 17'	BS	G	N	5/22/2019	1555	2	None	·	X					
11	JOF-BS-BG11-1.5/3.5-20190523	BG11	1.5'	3.5'	BS	G	N	5/23/2019	1230	2	None	·	X					
12	JOF-BS-BG11-6.5/8.5-20190523	BG11	6.5'	8.5'	BS	G	N	5/23/2019	1242	2	None	·	X					
13	JOF-BS-BG12-1.5/3.5-20190523	BG12	1.5'	3.5'	BS	G	N	5/23/2019	1352	2	None	·	X					

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

BJ 5/29/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	

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

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	5	of	5
COC No:	JOF_BS_20190522_1B		
2 of 2 Pages			
Task Desc:	JOF_BS		

Rev 1
BS
5/29/19

7/1/2019

Chain-of-Custody / Analytical Request Document

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

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Johnsonville Fossil Plant	Sampler:	David Webb
Lab Address:	301 Alpha Drive	Project #:	18020000	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	535 Steam Plant Road	Address	601 Grassmere Park Rd., Suite 22
		City	New Johnsonville State, Zip: TN, 37134	City/State	Nashville, TN Phone: 615-319-6613
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	irquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@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

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Start Depth	Sample Depth: Select Unit / End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3
1	JOF-BS-BG12-6.5/8.5-20190523	BG12	6.5'	8.5'	BS	G	N	5/23/2019	1409	2	None	•	X					
2	JOF-BS-BG12-11.5/13.5-20190523	BG12	11.5'	13.5'	BS	G	N	5/23/2019	1432	2	None	•	X					
3	JOF-BS-EB01-20190523	BG12	NA	NA	AQ	G	EB	5/23/2019	1504	3	None	•		X				
4	JOF-BS-FB01-20190523	BG12	NA	NA	AQ	G	FB	5/23/2019	1510	3	None	•		X				

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

FB02
BS 5/29/19

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
David Webb / Stantec	5/23/19	17:00		5/23/19	930

Sample Receipt Conditions			
• 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
Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	David Webb /

Form TVA 30067A

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving
Company: TestAmerica Laboratories, Inc.
Address: 13715 Rider Trail North,
City: Earth City
State, Zip: MO, 63045
Phone: 314-298-8566(Tel) 314-298-8757(Fax)
Email:
Project Name: JOF_BS_20190522_1B
Site:

Sampler:
Phone:
Due Date Requested: 6/27/2019
TAT Requested (days):
PO #:
WO #:
Project #: 18020000
SSOW#:

Lab PM: Lage, Gail
E-Mail: gail.lage@testamericainc.com
Carrier Tracking No(s):
State of Origin: Tennessee
Accreditations Required (See note):

COC No: 180-364062.1
Page: Page 1 of 2
Job #: 180-90566-1

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Ra/Dry_Grind Positive Combined Radium-226/228	901.1_Ra/Fill_Geo_21 Positive Combined Radium-226/228	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
JOF-BS-BG02-0.0/2.2-20190522 (180-90566-1)	5/22/19	11:48 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG02-6.5/8.5-20190522 (180-90566-2)	5/22/19	12:06 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG02-11.5/13.5-20190522 (180-90566-3)	5/22/19	12:23 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG02-16.5/18.5-20190522 (180-90566-4)	5/22/19	12:39 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG02-21.5/23.5-20190522 (180-90566-5)	5/22/19	13:04 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-FB01-20190522 (180-90566-6)	5/22/19	14:05 Central		Water				X	3	TVA - Batch alone
JOF-BS-BG08-1.5/3.5-20190522 (180-90566-7)	5/22/19	15:03 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG08-6.5/8.5-20190522 (180-90566-8)	5/22/19	15:18 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG08-11.5/13.5-20190522 (180-90566-9)	5/22/19	15:38 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
Other:

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	5/28/19 1700	Ta Pitt	Michael Hum	5-29-19 09:30	TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lage, Gail	Carrier Tracking No(s):	COC No: 180-364062.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: gail.lage@testamericainc.com	State of Origin: Tennessee	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-90566-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/27/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: JOF_BS_20190522_1B	Project #: 18020000			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Ra/Dry_Grind Positive Combined Radium-226/228	901.1_Ra/Fill_Geo_21 Positive Combined Radium-226/228	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
JOF-BS-BG08-15.0/17.0-20190522 (180-90566-10)	5/22/19	15:55 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG11-1.5/3.5-20190523 (180-90566-11)	5/23/19	12:30 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG11-6.5/8.5-20190523 (180-90566-12)	5/23/19	12:42 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG12-1.5/3.5-20190523 (180-90566-13)	5/23/19	13:52 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG12-6.5/8.5-20190523 (180-90566-14)	5/23/19	14:09 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-BG12-11.5/13.5-20190523 (180-90566-15)	5/23/19	14:32 Central		Solid			X		2	TVA - Batch alone. Quarantine zone soil. Contact PM if insufficient volume for Tuna
JOF-BS-EB01-20190523 (180-90566-16)	5/23/19	15:04 Central		Water				X	3	TVA - Batch alone
JOF-BS-FB01-20190523 (180-90566-17)	5/23/19	15:10 Central		Water				X	3	TVA - Batch alone

180-90566-01 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 5/28/19 1200	Company: PA	Received by: Michael Hum	Date/Time: 5-29-19 09:30	Company: TA SR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-90566-1

Login Number: 90566
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins 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	

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-90566-1

Login Number: 90566
List Number: 2
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 05/29/19 11:30 AM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.1
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?	N/A	
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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-90566-1

Login Number: 90566
List Number: 3
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 05/29/19 11:38 AM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0
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?	N/A	
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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	