

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-3235-1

Client Project/Site: RFP-CBA-022 (21 DAY TAT)

For:

Westinghouse Electric Company LLC
3300 State Road P
Festus, Missouri 63028

Attn: Martin Swanson



Authorized for release by:
8/13/2013 4:30:50 PM

Ivan Vania, Project Manager I
ivan.vania@testamericainc.com

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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.

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Case Narrative

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Job ID: 160-3235-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Westinghouse Electric Company LLC

Project: RFP-CBA-022 (21 DAY TAT)

Report Number: 160-3235-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 08/03/2013; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.8° C, 2.2° C, 23.7° C and 25.1° C. Several of the samples were received on ice with a temperature of < 2C. For this job, there are only rad analyses requested. Samples for rad analysis do not require cold preservation.

TECHNETIUM-99 (ICPMS)

Samples L100816BUB00 (160-3235-1), L100817BUB00 (160-3235-2), L100818BUB00 (160-3235-3), L100819BUB00 (160-3235-4), L100820BUB00 (160-3235-5), L100821BUB00 (160-3235-6), L100822BUB00 (160-3235-7), L100823BUB00 (160-3235-8), L100824BUB00 (160-3235-9), L100825BUB00 (160-3235-10), L100826BUB00 (160-3235-11), L100827BUB00 (160-3235-12) and L100828BUB00 (160-3235-13) were analyzed for Technetium-99 (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 08/06/2013 and analyzed on 08/09/2013 and 08/12/2013.

No difficulties were encountered during the Tc-99 analysis. All quality control parameters were within the acceptance limits.

PERCENT SOLIDS

Case Narrative

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Job ID: 160-3235-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Samples L100816BUB00 (160-3235-1), L100817BUB00 (160-3235-2), L100818BUB00 (160-3235-3), L100819BUB00 (160-3235-4), L100820BUB00 (160-3235-5), L100821BUB00 (160-3235-6), L100822BUB00 (160-3235-7), L100823BUB00 (160-3235-8), L100824BUB00 (160-3235-9), L100825BUB00 (160-3235-10), L100826BUB00 (160-3235-11), L100827BUB00 (160-3235-12) and L100828BUB00 (160-3235-13) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 08/05/2013.

No difficulties were encountered during the % solids analysis. All quality control parameters were within the acceptance limits.

CESIUM-137 & OTHER GAMMA EMITTERS (GS)

Samples L100816BUB00 (160-3235-1), L100817BUB00 (160-3235-2), L100818BUB00 (160-3235-3), L100819BUB00 (160-3235-4), L100820BUB00 (160-3235-5), L100821BUB00 (160-3235-6), L100822BUB00 (160-3235-7), L100823BUB00 (160-3235-8), L100824BUB00 (160-3235-9), L100825BUB00 (160-3235-10), L100826BUB00 (160-3235-11), L100827BUB00 (160-3235-12) and L100828BUB00 (160-3235-13) were analyzed for Cesium-137 & Other Gamma Emitters (GS) in accordance with DOE GA-01-R. The samples were leached on 08/06/2013, and prepared and analyzed on 08/08/2013.

Preparation Batch 65535:

Radium-226 is reported in these samples at the client's request. Radium-226 is reported from the 609.31 keV line of Bismuth-214. Because the samples have not had a 21-day ingrowth, the activity for Radium-226 is an estimated value and may be biased low. This bias is caused by the disruption of secular equilibrium between Radium-226 and Bismuth-214 by the loss of Radon-222 during sample preparation. (160-3235-1 DU), (MB 160-65535/1-A), L100816BUB00 (160-3235-1), L100817BUB00 (160-3235-2), L100818BUB00 (160-3235-3), L100819BUB00 (160-3235-4), L100820BUB00 (160-3235-5), L100821BUB00 (160-3235-6), L100822BUB00 (160-3235-7), L100823BUB00 (160-3235-8), L100824BUB00 (160-3235-9), L100825BUB00 (160-3235-10), L100826BUB00 (160-3235-11), L100827BUB00 (160-3235-12), L100828BUB00 (160-3235-13)

No other other difficulties were encountered during the Gamma spec analysis. All other quality control parameters were within the acceptance limits.

Hematite Decommissioning Project				Procedure HDP-PR-QA-006, Chain of Custody												
				Revision: 3										Page 1 of 1		
				Westinghouse Non-Proprietary Class 3												
FORM HDP-PR-QA-006-1 CHAIN OF CUSTODY																
Instructions: Each time the container is transferred to another organization, a person from each organization should sign the CoC. The Laboratory/End User must verify that the sample is correctly identified before the sample is released for use or analysis and send the completed CoC to HDP.																
Chain of Custody ID No. F-080213-01 Page 1/2				Requested Analysis												
Project Name: Westinghouse Electric Company Contact Person: Gerald Rood Phone Number: 314-810-3382 Sampler Name: Scott Jenkins				Comp (C) or Grab (G)	Gamma Spec	Isotopic Uranium	Tc-99	Gamma Spec (21 day ingrow for Ra-226)							Total Containers	Laboratory Name:
																TA-MO
																Laboratory Address: 13715 Rider Trail North
																Phone No. 314-298-8566
																Laboratory Contact Person: Joe Walker
															Phone No. 708-870-8453	
Turn Around Time																
Rush (7 days)																
Remarks																
Sample ID	Date	Time	Matrix													
L100816BUB00	8/1/2013	9:08	S	C	X		X	X							1	Biased-FSS Samples LSA1008
L100817BUB00	8/1/2013	9:18	S	C	X		X	X							1	
L100818BUB00	8/1/2013	9:28	S	C	X		X	X							1	
L100819BUB00	8/1/2013	9:38	S	C	X		X	X							1	
L100820BUB00	8/1/2013	9:48	S	C	X		X	X							1	
L100821BUB00	8/1/2013	9:58	S	C	X		X	X							1	
L100822BUB00	8/1/2013	10:08	S	C	X		X	X							1	
L100823BUB00	8/1/2013	10:18	S	C	X		X	X							1	
L100824BUB00	8/1/2013	10:28	S	C	X		X	X							1	
L100825BUB00	8/1/2013	10:38	S	C	X		X	X							1	
L100826BUB00	8/1/2013	10:48	S	C	X		X	X							1	
L100827BUB00	8/1/2013	10:58	S	C	X		X	X							1	
Relinquished by: <i>[Signature]</i>		Date/Time: 8-5-13 1500		Received by: <i>[Signature]</i>		Date/Time: 8-5-13 15:00		Total: 13		Cooler Temperature: 4 Degrees C		Comments: Please re-analyze samples after 21-day ingrowth period.				
Company Name: WEL				Company Name: WEL				Cooler ID: 0803-01		Shipper and Number:						
Received by: <i>[Signature]</i>		Date/Time: 8-7-13 1601		Relinquished by:		Date/Time:										
Company Name: TH				Company Name:												
Relinquished by:		Date/Time:		Received by:		Date/Time:										
Company Name:				Company Name:						Verified By: <i>[Signature]</i>						

3235-1
3235-2



Login Sample Receipt Checklist

Client: Westinghouse Electric Company LLC

Job Number: 160-3235-1

Login Number: 3235

List Source: TestAmerica St. Louis

List Number: 1

Creator: Vania, Ivan H

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	Where required
Cooler Temperature is acceptable.	True	See NCM
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Method Summary

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS), Tc-99	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL
6020A	Metals (ICP/MS), Tc-99 in Activity	SW846	TAL SL
GA-01-R	Cesium-137 & Other Gamma Emitters (GS)	DOE	TAL SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-3235-1	L100816BUB00	Solid	08/01/13 09:08	08/03/13 16:01
160-3235-2	L100817BUB00	Solid	08/01/13 09:18	08/03/13 16:01
160-3235-3	L100818BUB00	Solid	08/01/13 09:28	08/03/13 16:01
160-3235-4	L100819BUB00	Solid	08/01/13 09:38	08/03/13 16:01
160-3235-5	L100820BUB00	Solid	08/01/13 09:48	08/03/13 16:01
160-3235-6	L100821BUB00	Solid	08/01/13 09:58	08/03/13 16:01
160-3235-7	L100822BUB00	Solid	08/01/13 10:08	08/03/13 16:01
160-3235-8	L100823BUB00	Solid	08/01/13 10:18	08/03/13 16:01
160-3235-9	L100824BUB00	Solid	08/01/13 10:28	08/03/13 16:01
160-3235-10	L100825BUB00	Solid	08/01/13 10:38	08/03/13 16:01
160-3235-11	L100826BUB00	Solid	08/01/13 10:48	08/03/13 16:01
160-3235-12	L100827BUB00	Solid	08/01/13 10:58	08/03/13 16:01
160-3235-13	L100828BUB00	Solid	08/01/13 15:32	08/03/13 16:01

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100816BUB00

Lab Sample ID: 160-3235-1

Date Collected: 08/01/13 09:08

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 90.7

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000035	J	0.00054	0.000016	mg/Kg	☆	08/06/13 09:27	08/12/13 12:06	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.598		0.0433	0.0680	1.07	0.184	pCi/g	08/06/13 09:27	08/12/13 12:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	103		30 - 110					08/06/13 09:27	08/12/13 12:06	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.490		0.106	0.117		0.159	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Americium 241	-0.0316	U	0.0657	0.0657		0.109	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Bismuth 212	1.03		0.301	0.320		0.196	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Bismuth 214	0.605		0.100	0.118		0.0694	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Lead 212	0.792		0.0682	0.123		0.0523	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Lead 214	0.710		0.0877	0.115		0.0675	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Potassium 40	13.5		1.19	1.82		0.423	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Protactinium 234m	0.491	U	3.61	3.61		6.02	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Protactinium 231	-0.550	U	0.753	0.756		1.25	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Radium 226	0.605		0.100	0.118		0.0694	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Thorium 234	2.37		0.432	0.498		0.954	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Uranium 235	0.831		0.200	0.217		0.245	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Thorium 232	0.490		0.106	0.117		0.159	pCi/g	08/08/13 11:06	08/08/13 21:20	1
Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.253		0.0442	0.0514		0.0313	pCi/g	08/08/13 11:06	08/08/13 21:20	1

Client Sample ID: L100817BUB00

Lab Sample ID: 160-3235-2

Date Collected: 08/01/13 09:18

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 91.0

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000025	J	0.00077	0.000023	mg/Kg	☆	08/06/13 09:27	08/09/13 19:52	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.431	*	0.192	0.277	1.55	0.265	pCi/g	08/06/13 09:27	08/09/13 19:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	71		30 - 110					08/06/13 09:27	08/09/13 19:52	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100817BUB00

Lab Sample ID: 160-3235-2

Date Collected: 08/01/13 09:18

Matrix: Solid

Date Received: 08/03/13 16:01

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	0.552		0.0716	0.0911		0.0681	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Americium 241	-0.0163	U	0.0475	0.0475		0.0795	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Bismuth 212	0.601		0.215	0.224		0.220	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Bismuth 214	0.529		0.0700	0.0890		0.0503	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Lead 212	0.492		0.0508	0.0815		0.0583	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Lead 214	0.575		0.0588	0.0839		0.0499	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Potassium 40	10.7		0.762	1.33		0.271	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Protactinium 234m	3.63		2.11	2.14		3.18	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Protactinium 231	0.216	U	0.156	0.158		0.767	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Radium 226	0.529		0.0700	0.0890		0.0503	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Thorium 234	1.71		0.546	0.575		0.654	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Uranium 235	0.418		0.126	0.133		0.168	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Thorium 232	0.552		0.0716	0.0911		0.0681	pCi/g	08/08/13 11:06	08/08/13 17:25	1
Other Detected										
Radionuclides	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Tl-208	0.185		0.0290	0.0348		0.0221	pCi/g	08/08/13 11:06	08/08/13 17:25	1

Client Sample ID: L100818BUB00

Lab Sample ID: 160-3235-3

Date Collected: 08/01/13 09:28

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 84.9

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000035	J	0.00091	0.000027	mg/Kg	☆	08/06/13 09:27	08/09/13 19:56	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Technetium 99	0.599	*	0.0937	0.169	1.82	0.312	pCi/g	08/06/13 09:27	08/09/13 19:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	64		30 - 110					08/06/13 09:27	08/09/13 19:56	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	1.15		0.144	0.186		0.0973	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Americium 241	-0.0205	U	0.0985	0.0986		0.0941	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Bismuth 212	1.55		0.474	0.500		0.418	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Bismuth 214	0.712		0.0932	0.119		0.0676	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Lead 212	1.03		0.0714	0.151		0.0565	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Lead 214	0.822		0.0849	0.120		0.0652	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Potassium 40	16.6		1.12	2.04		0.138	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Protactinium 234m	0.800	U	3.13	3.13		5.47	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Protactinium 231	0.448	U	0.232	0.237		0.975	pCi/g	08/08/13 11:06	08/08/13 17:27	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100818BUB00

Lab Sample ID: 160-3235-3

Date Collected: 08/01/13 09:28

Matrix: Solid

Date Received: 08/03/13 16:01

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.712		0.0932	0.119		0.0676	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Thorium 234	2.34		0.784	0.821		0.943	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Uranium 235	0.522		0.149	0.158		0.179	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Thorium 232	1.15		0.144	0.186		0.0973	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Other Detected										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.307		0.0472	0.0569		0.0357	pCi/g	08/08/13 11:06	08/08/13 17:27	1

Client Sample ID: L100819BUB00

Lab Sample ID: 160-3235-4

Date Collected: 08/01/13 09:38

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 83.0

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00094	0.000028	mg/Kg	☼	08/06/13 09:27	08/09/13 20:00	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.231	U	0.169	0.263	1.87	0.321	pCi/g	08/06/13 09:27	08/09/13 20:00	1
Carrier										
Re	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	65		30 - 110					08/06/13 09:27	08/09/13 20:00	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.11		0.138	0.179		0.0923	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Americium 241	0.0246	U	0.0763	0.0763		0.128	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Bismuth 212	0.845		0.415	0.424		0.589	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Bismuth 214	0.858		0.127	0.155		0.0888	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Lead 212	1.10		0.0881	0.167		0.0762	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Lead 214	0.868		0.0979	0.133		0.0939	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Potassium 40	17.1		1.34	2.20		0.193	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Protactinium 234m	4.03	U	3.87	3.89		5.81	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Protactinium 231	0.341	U	0.284	0.287		1.41	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Radium 226	0.858		0.127	0.155		0.0888	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Thorium 234	2.42		0.498	0.559		1.17	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Uranium 235	0.727		0.209	0.222		0.252	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Thorium 232	1.11		0.138	0.179		0.0923	pCi/g	08/08/13 11:06	08/08/13 17:27	1
Other Detected										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.397		0.0566	0.0700		0.0364	pCi/g	08/08/13 11:06	08/08/13 17:27	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100820BUB00

Lab Sample ID: 160-3235-5

Date Collected: 08/01/13 09:48

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 77.5

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00096	0.000029	mg/Kg	☼	08/06/13 09:27	08/09/13 20:04	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.276	U	0.0152	0.0441	1.92	0.329	pCi/g	08/06/13 09:27	08/09/13 20:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	67		30 - 110					08/06/13 09:27	08/09/13 20:04	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.924		0.120	0.152		0.101	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Americium 241	0.0210	U	0.0528	0.0528		0.0882	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Bismuth 212	1.03		0.337	0.354		0.320	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Bismuth 214	0.740		0.0846	0.114		0.0539	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Lead 212	1.01		0.0669	0.147		0.0503	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Lead 214	0.844		0.0748	0.115		0.0613	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Potassium 40	19.0		1.11	2.24		0.288	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Protactinium 234m	0.861	U	2.76	2.76		4.79	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Protactinium 231	0.455	U	0.246	0.251		0.955	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Radium 226	0.740		0.0846	0.114		0.0539	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Thorium 234	1.25		0.567	0.582		0.752	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Uranium 235	0.0906	U	0.108	0.109		0.209	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Thorium 232	0.924		0.120	0.152		0.101	pCi/g	08/08/13 11:06	08/08/13 17:28	1
Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.319		0.0445	0.0555		0.0344	pCi/g	08/08/13 11:06	08/08/13 17:28	1

Client Sample ID: L100821BUB00

Lab Sample ID: 160-3235-6

Date Collected: 08/01/13 09:58

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 80.4

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00085	0.000026	mg/Kg	☼	08/06/13 09:27	08/09/13 20:08	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.222	U	0.152	0.212	1.70	0.292	pCi/g	08/06/13 09:27	08/09/13 20:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	73		30 - 110					08/06/13 09:27	08/09/13 20:08	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100821BUB00

Lab Sample ID: 160-3235-6

Date Collected: 08/01/13 09:58

Matrix: Solid

Date Received: 08/03/13 16:01

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	1.15		0.172	0.208		0.128	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Americium 241	-0.00238	U	0.0456	0.0456		0.0783	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Bismuth 212	2.10		0.465	0.514		0.262	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Bismuth 214	0.729		0.120	0.142		0.0864	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Lead 212	1.01		0.0829	0.155		0.0659	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Lead 214	0.837		0.118	0.146		0.0925	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Potassium 40	16.7		1.42	2.22		0.502	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Protactinium 234m	0.0572	U	4.23	4.23		7.63	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Protactinium 231	0.382	U	0.237	0.241		1.47	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Radium 226	0.729		0.120	0.142		0.0864	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Thorium 234	1.74		0.707	0.730		0.902	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Uranium 235	0.108	U	0.146	0.146		0.232	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Thorium 232	1.15		0.172	0.208		0.128	pCi/g	08/08/13 11:06	08/08/13 18:00	1
Other Detected										
Radionuclides	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Tl-208	0.363		0.0529	0.0650		0.0343	pCi/g	08/08/13 11:06	08/08/13 18:00	1

Client Sample ID: L100822BUB00

Lab Sample ID: 160-3235-7

Date Collected: 08/01/13 10:08

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 82.0

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000025	J	0.00076	0.000023	mg/Kg	☆	08/06/13 09:27	08/09/13 20:12	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Technetium 99	0.431	*	0.168	0.215	1.52	0.260	pCi/g	08/06/13 09:27	08/09/13 20:12	1
Carrier										
	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	80		30 - 110					08/06/13 09:27	08/09/13 20:12	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	1.08		0.131	0.171		0.101	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Americium 241	0.0139	U	0.0607	0.0607		0.102	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Bismuth 212	1.37		0.326	0.356		0.248	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Bismuth 214	0.657		0.0825	0.107		0.0604	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Lead 212	1.06		0.0672	0.152		0.0497	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Lead 214	0.837		0.0844	0.121		0.0628	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Potassium 40	17.4		1.03	2.06		0.270	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Protactinium 234m	1.68	U	2.55	2.55		4.26	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Protactinium 231	0.473	U	0.205	0.212		1.08	pCi/g	08/08/13 11:06	08/08/13 18:04	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100822BUB00

Lab Sample ID: 160-3235-7

Date Collected: 08/01/13 10:08

Matrix: Solid

Date Received: 08/03/13 16:01

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.657		0.0825	0.107		0.0604	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Thorium 234	0.952		0.286	0.303		0.748	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Uranium 235	0.146	U	0.128	0.129		0.223	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Thorium 232	1.08		0.131	0.171		0.101	pCi/g	08/08/13 11:06	08/08/13 18:04	1
Other Detected										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.308		0.0394	0.0508		0.0297	pCi/g	08/08/13 11:06	08/08/13 18:04	1

Client Sample ID: L100823BUB00

Lab Sample ID: 160-3235-8

Date Collected: 08/01/13 10:18

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 71.7

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00091	0.000027	mg/Kg	☆	08/06/13 09:27	08/09/13 20:15	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.429	*	0.0978	0.139	1.82	0.312	pCi/g	08/06/13 09:27	08/09/13 20:15	1
Carrier										
Re	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	76		30 - 110					08/06/13 09:27	08/09/13 20:15	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.983		0.107	0.146		0.0834	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Americium 241	-0.00793	U	0.0584	0.0584		0.0981	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Bismuth 212	1.20		0.376	0.396		0.319	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Bismuth 214	0.657		0.0858	0.110		0.0673	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Lead 212	0.925		0.0848	0.147		0.0758	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Lead 214	0.744		0.0740	0.107		0.0723	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Potassium 40	18.3		1.05	2.15		0.319	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Protactinium 234m	4.36		2.40	2.44		4.13	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Protactinium 231	0.304	U	0.181	0.184		0.969	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Radium 226	0.657		0.0858	0.110		0.0673	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Thorium 234	1.43		0.690	0.706		0.832	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Uranium 235	0.123	U	0.120	0.121		0.217	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Thorium 232	0.983		0.107	0.146		0.0834	pCi/g	08/08/13 11:06	08/08/13 18:05	1
Other Detected										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.309		0.0422	0.0530		0.0325	pCi/g	08/08/13 11:06	08/08/13 18:05	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100824BUB00

Lab Sample ID: 160-3235-9

Date Collected: 08/01/13 10:28

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 83.0

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00090	0.000027	mg/Kg	☼	08/06/13 09:27	08/09/13 20:19	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.326	*	0.138	0.210	1.79	0.307	pCi/g	08/06/13 09:27	08/09/13 20:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	67		30 - 110					08/06/13 09:27	08/09/13 20:19	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.04		0.141	0.176		0.106	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Americium 241	-0.00271	U	0.145	0.145		0.103	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Bismuth 212	1.59		0.450	0.479		0.361	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Bismuth 214	0.755		0.100	0.127		0.0706	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Lead 212	0.954		0.0735	0.144		0.0577	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Lead 214	0.868		0.0967	0.132		0.0799	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Potassium 40	19.1		1.31	2.35		0.295	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Protactinium 234m	1.04	U	2.54	2.54		4.44	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Protactinium 231	0.386	U	0.215	0.219		1.14	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Radium 226	0.755		0.100	0.127		0.0706	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Thorium 234	2.06		0.669	0.703		0.855	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Uranium 235	0.446		0.161	0.167		0.205	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Thorium 232	1.04		0.141	0.176		0.106	pCi/g	08/08/13 11:06	08/08/13 18:06	1
Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.345		0.0473	0.0594		0.0336	pCi/g	08/08/13 11:06	08/08/13 18:06	1

Client Sample ID: L100825BUB00

Lab Sample ID: 160-3235-10

Date Collected: 08/01/13 10:38

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 81.9

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.0011	0.000033	mg/Kg	☼	08/06/13 09:27	08/09/13 20:23	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.379	*	0.186	0.339	2.18	0.373	pCi/g	08/06/13 09:27	08/09/13 20:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	56		30 - 110					08/06/13 09:27	08/09/13 20:23	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100825BUB00

Lab Sample ID: 160-3235-10

Date Collected: 08/01/13 10:38

Matrix: Solid

Date Received: 08/03/13 16:01

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	1.01		0.147	0.180		0.147	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Americium 241	-0.000490	U	0.0682	0.0682		0.115	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Bismuth 212	1.45		0.478	0.501		0.379	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Bismuth 214	0.677		0.106	0.127		0.0798	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Lead 212	0.916		0.0769	0.141		0.0666	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Lead 214	0.725		0.0925	0.119		0.0690	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Potassium 40	18.0		1.32	2.27		0.177	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Protactinium 234m	0.000	U	1.83	1.83		8.38	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Protactinium 231	0.275	U	0.187	0.189		1.18	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Radium 226	0.677		0.106	0.127		0.0798	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Thorium 234	1.65		0.698	0.719		0.892	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Uranium 235	0.323		0.182	0.184		0.215	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Thorium 232	1.01		0.147	0.180		0.147	pCi/g	08/08/13 11:06	08/08/13 18:07	1
Other Detected										
Radionuclides	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Tl-208	0.271		0.0451	0.0531		0.0361	pCi/g	08/08/13 11:06	08/08/13 18:07	1

Client Sample ID: L100826BUB00

Lab Sample ID: 160-3235-11

Date Collected: 08/01/13 10:48

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 82.8

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00073	0.000022	mg/Kg	☼	08/06/13 09:27	08/09/13 20:27	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Technetium 99	0.100	U	0.0486	0.0595	1.46	0.250	pCi/g	08/06/13 09:27	08/09/13 20:27	1
Carrier										
	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	83		30 - 110					08/06/13 09:27	08/09/13 20:27	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Actinium 228	1.08		0.112	0.157		0.101	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Americium 241	0.000792	U	0.0570	0.0570		0.0965	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Bismuth 212	0.906		0.325	0.338		0.337	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Bismuth 214	0.715		0.0909	0.117		0.0681	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Lead 212	1.03		0.0700	0.151		0.0538	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Lead 214	0.881		0.0783	0.120		0.0637	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Potassium 40	19.3		1.16	2.29		0.320	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Protactinium 234m	4.09	U	2.61	2.65		4.94	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Protactinium 231	0.469	U	0.291	0.295		0.768	pCi/g	08/08/13 11:06	08/08/13 18:08	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100826BUB00

Lab Sample ID: 160-3235-11

Date Collected: 08/01/13 10:48

Matrix: Solid

Date Received: 08/03/13 16:01

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.715		0.0909	0.117		0.0681	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Thorium 234	1.53		0.647	0.666		0.833	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Uranium 235	0.129	U	0.158	0.159		0.208	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Thorium 232	1.08		0.112	0.157		0.101	pCi/g	08/08/13 11:06	08/08/13 18:08	1
Other Detected										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.358		0.0471	0.0600		0.0344	pCi/g	08/08/13 11:06	08/08/13 18:08	1

Client Sample ID: L100827BUB00

Lab Sample ID: 160-3235-12

Date Collected: 08/01/13 10:58

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 80.4

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00088	0.000026	mg/Kg	☆	08/06/13 09:27	08/09/13 20:39	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.251	U	0.117	0.169	1.76	0.301	pCi/g	08/06/13 09:27	08/09/13 20:39	1
Carrier										
Re	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Re	71		30 - 110					08/06/13 09:27	08/09/13 20:39	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	1.03		0.144	0.178		0.110	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Americium 241	0.0265	U	0.0599	0.0600		0.100	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Bismuth 212	1.62		0.476	0.505		0.412	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Bismuth 214	0.827		0.118	0.146		0.0813	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Lead 212	1.07		0.0839	0.161		0.0721	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Lead 214	0.887		0.0979	0.134		0.0861	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Potassium 40	18.7		1.38	2.36		0.308	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Protactinium 234m	1.45	U	4.23	4.24		6.71	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Protactinium 231	0.427	U	0.264	0.269		1.33	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Radium 226	0.827		0.118	0.146		0.0813	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Thorium 234	1.22		0.792	0.802		0.992	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Uranium 235	0.200	U	0.157	0.159		0.204	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Thorium 232	1.03		0.144	0.178		0.110	pCi/g	08/08/13 11:06	08/08/13 19:34	1
Other Detected										
Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.350		0.0557	0.0665		0.0374	pCi/g	08/08/13 11:06	08/08/13 19:34	1

TestAmerica St. Louis

Client Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Client Sample ID: L100828BUB00

Lab Sample ID: 160-3235-13

Date Collected: 08/01/13 15:32

Matrix: Solid

Date Received: 08/03/13 16:01

Percent Solids: 88.6

Method: 6020A - Metals (ICP/MS), Tc-99

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	0.000029	J	0.00097	0.000029	mg/Kg	☼	08/06/13 09:27	08/09/13 20:43	1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	0.504	*	0.214	0.377	1.93	0.331	pCi/g	08/06/13 09:27	08/09/13 20:43	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	58		30 - 110	08/06/13 09:27	08/09/13 20:43	1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.570		0.0697	0.0908		0.0541	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Americium 241	-0.00326	U	0.0374	0.0374		0.0636	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Bismuth 212	0.940		0.300	0.315		0.243	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Bismuth 214	0.463		0.0612	0.0779		0.0424	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Lead 212	0.547		0.0474	0.0852		0.0421	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Lead 214	0.577		0.0596	0.0845		0.0424	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Potassium 40	9.76		0.725	1.23		0.236	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Protactinium 234m	2.38	U	1.73	1.75		3.30	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Protactinium 231	0.309	U	0.180	0.183		0.817	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Radium 226	0.463		0.0612	0.0779		0.0424	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Thorium 234	0.775		0.525	0.531		0.646	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Uranium 235	0.102	U	0.0995	0.100		0.148	pCi/g	08/08/13 11:06	08/08/13 19:38	1
Thorium 232	0.570		0.0697	0.0908		0.0541	pCi/g	08/08/13 11:06	08/08/13 19:38	1

Other Detected Radionuclides	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tl-208	0.172		0.0260	0.0315		0.0180	pCi/g	08/08/13 11:06	08/08/13 19:38	1

TestAmerica St. Louis

QC Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Method: 6020A - Metals (ICP/MS), Tc-99

Lab Sample ID: MB 160-64842/1-A

Matrix: Solid

Analysis Batch: 65972

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Technetium 99	ND		0.00069	0.000021	mg/Kg		08/06/13 09:27	08/09/13 19:25	1

Lab Sample ID: LCS 160-64842/2-A

Matrix: Solid

Analysis Batch: 66038

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	0.00217	0.00243		mg/Kg		112	80 - 120

Lab Sample ID: 160-3235-1 MS

Matrix: Solid

Analysis Batch: 66038

Client Sample ID: L100816BUB00

Prep Type: Total/NA

Prep Batch: 64842

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Technetium 99	0.000035	J	0.00256	0.00277		mg/Kg	☼	107	75 - 125

Lab Sample ID: 160-3235-1 MSD

Matrix: Solid

Analysis Batch: 66038

Client Sample ID: L100816BUB00

Prep Type: Total/NA

Prep Batch: 64842

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Technetium 99	0.000035	J	0.00253	0.00276		mg/Kg	☼	108	75 - 125	0	30

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Lab Sample ID: MB 160-64842/1-A

Matrix: Solid

Analysis Batch: 65973

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64842

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Technetium 99	-0.01066	U	-0.0110	0.0154	1.38	0.237	pCi/g	08/06/13 09:27	08/09/13 19:25	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Re	72		30 - 110	08/06/13 09:27	08/09/13 19:25	1

Lab Sample ID: LCS 160-64842/2-A

Matrix: Solid

Analysis Batch: 66039

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64842

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99	37.1	41.67		3.70	0.927	0.159	pCi/g	112	80 - 120

Carrier	LCS %Yield	LCS Qualifier	Limits
Re	107		30 - 110

TestAmerica St. Louis

QC Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity (Continued)

Lab Sample ID: 160-3235-1 MS

Matrix: Solid

Analysis Batch: 66039

Client Sample ID: L100816BUB00

Prep Type: Total/NA

Prep Batch: 64842

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Technetium 99	0.598		43.7	47.42		4.32	1.09	0.187	pCi/g	107	75 - 125
Carrier	MS %Yield	MS Qualifier	Limits								
Re	101		30 - 110								

Lab Sample ID: 160-3235-1 MSD

Matrix: Solid

Analysis Batch: 66039

Client Sample ID: L100816BUB00

Prep Type: Total/NA

Prep Batch: 64842

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Technetium 99	0.598		43.3	47.26		4.51	1.08	0.185	pCi/g	108	75 - 125	0.02	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Re	102		30 - 110										

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-65535/1-A

Matrix: Solid

Analysis Batch: 65546

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 65535

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.0000	U	0.0112	0.0112		0.0952	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Americium 241	0.005859	U	0.0124	0.0124		0.0216	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Bismuth 212	-0.02242	U	0.121	0.121		0.236	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Bismuth 214	0.02985	U	0.0306	0.0307		0.0416	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Lead 212	0.008848	U	0.0152	0.0152		0.0284	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Lead 214	-0.004672	U	0.0358	0.0358		0.0431	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Potassium 40	-0.02095	U	0.187	0.187		0.327	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Protactinium 234m	0.0000	U	0.424	0.424		1.56	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Protactinium 231	0.02099	U	0.0522	0.0523		0.478	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Radium 226	0.02985	U	0.0306	0.0307		0.0416	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Thorium 234	0.06171	U	0.0927	0.0929		0.290	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Uranium 235	0.02561	U	0.0310	0.0311		0.0501	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Thorium 232	0.0000	U	0.0112	0.0112		0.0952	pCi/g	08/08/13 11:06	08/08/13 17:21	1
Other Detected Radionuclides	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Other Detected Radionuclide	None						pCi/g	08/08/13 11:06	08/08/13 17:21	1

TestAmerica St. Louis

QC Sample Results

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Method: GA-01-R - Cesium-137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-65535/2-A
Matrix: Solid
Analysis Batch: 65544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65535

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium 241	97.7	94.39		9.88		0.979	pCi/g	97	87 - 116
Cesium 137	31.7	31.72		3.33	0.200	0.195	pCi/g	100	87 - 120
Cobalt 60	24.9	24.79		2.51		0.101	pCi/g	99	87 - 115

Lab Sample ID: 160-3235-1 DU
Matrix: Solid
Analysis Batch: 65551

Client Sample ID: L100816BUB00
Prep Type: Total/NA
Prep Batch: 65535

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Actinium 228	0.490		0.7712		0.147		0.0729	pCi/g	1.07	1
Americium 241	-0.0316	U	0.000249	U	0.0468		0.0793	pCi/g	0.28	1
Bismuth 212	1.03		0.5934		0.253		0.332	pCi/g	0.77	1
Bismuth 214	0.605		0.5857		0.0980		0.0542	pCi/g	0.09	1
Lead 212	0.792		0.6887		0.105		0.0514	pCi/g	0.45	1
Lead 214	0.710		0.6472		0.0923		0.0564	pCi/g	0.30	1
Potassium 40	13.5		13.64		1.67		0.274	pCi/g	0.05	1
Protactinium 234m	0.491	U	2.283	U	2.53		4.23	pCi/g	0.29	1
Protactinium 231	-0.550	U	0.2482	U	0.161		0.788	pCi/g	0.87	1
Radium 226	0.605		0.5857		0.0980		0.0542	pCi/g	0.09	1
Thorium 234	2.37		1.958		0.561		0.675	pCi/g	0.39	1
Uranium 235	0.831		0.6715		0.148		0.177	pCi/g	0.44	1
Thorium 232	0.490		0.7712		0.147		0.0729	pCi/g	1.07	1

QC Association Summary

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Metals

Prep Batch: 64842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-1	L100816BUB00	Total/NA	Solid	None	
160-3235-1 MS	L100816BUB00	Total/NA	Solid	None	
160-3235-1 MSD	L100816BUB00	Total/NA	Solid	None	
160-3235-2	L100817BUB00	Total/NA	Solid	None	
160-3235-3	L100818BUB00	Total/NA	Solid	None	
160-3235-4	L100819BUB00	Total/NA	Solid	None	
160-3235-5	L100820BUB00	Total/NA	Solid	None	
160-3235-6	L100821BUB00	Total/NA	Solid	None	
160-3235-7	L100822BUB00	Total/NA	Solid	None	
160-3235-8	L100823BUB00	Total/NA	Solid	None	
160-3235-9	L100824BUB00	Total/NA	Solid	None	
160-3235-10	L100825BUB00	Total/NA	Solid	None	
160-3235-11	L100826BUB00	Total/NA	Solid	None	
160-3235-12	L100827BUB00	Total/NA	Solid	None	
160-3235-13	L100828BUB00	Total/NA	Solid	None	
LCS 160-64842/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-64842/1-A	Method Blank	Total/NA	Solid	None	

Analysis Batch: 65972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-2	L100817BUB00	Total/NA	Solid	6020A	64842
160-3235-3	L100818BUB00	Total/NA	Solid	6020A	64842
160-3235-4	L100819BUB00	Total/NA	Solid	6020A	64842
160-3235-5	L100820BUB00	Total/NA	Solid	6020A	64842
160-3235-6	L100821BUB00	Total/NA	Solid	6020A	64842
160-3235-7	L100822BUB00	Total/NA	Solid	6020A	64842
160-3235-8	L100823BUB00	Total/NA	Solid	6020A	64842
160-3235-9	L100824BUB00	Total/NA	Solid	6020A	64842
160-3235-10	L100825BUB00	Total/NA	Solid	6020A	64842
160-3235-11	L100826BUB00	Total/NA	Solid	6020A	64842
160-3235-12	L100827BUB00	Total/NA	Solid	6020A	64842
160-3235-13	L100828BUB00	Total/NA	Solid	6020A	64842
MB 160-64842/1-A	Method Blank	Total/NA	Solid	6020A	64842

Analysis Batch: 66038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-1	L100816BUB00	Total/NA	Solid	6020A	64842
160-3235-1 MS	L100816BUB00	Total/NA	Solid	6020A	64842
160-3235-1 MSD	L100816BUB00	Total/NA	Solid	6020A	64842
LCS 160-64842/2-A	Lab Control Sample	Total/NA	Solid	6020A	64842

General Chemistry

Analysis Batch: 64712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-1	L100816BUB00	Total/NA	Solid	Moisture	
160-3235-2	L100817BUB00	Total/NA	Solid	Moisture	
160-3235-3	L100818BUB00	Total/NA	Solid	Moisture	
160-3235-4	L100819BUB00	Total/NA	Solid	Moisture	
160-3235-5	L100820BUB00	Total/NA	Solid	Moisture	

TestAmerica St. Louis

QC Association Summary

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

General Chemistry (Continued)

Analysis Batch: 64712 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-6	L100821BUB00	Total/NA	Solid	Moisture	
160-3235-7	L100822BUB00	Total/NA	Solid	Moisture	
160-3235-8	L100823BUB00	Total/NA	Solid	Moisture	
160-3235-9	L100824BUB00	Total/NA	Solid	Moisture	
160-3235-10	L100825BUB00	Total/NA	Solid	Moisture	
160-3235-11	L100826BUB00	Total/NA	Solid	Moisture	
160-3235-12	L100827BUB00	Total/NA	Solid	Moisture	
160-3235-13	L100828BUB00	Total/NA	Solid	Moisture	
160-3235-13 DU	L100828BUB00	Total/NA	Solid	Moisture	

Rad

Prep Batch: 64842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-1	L100816BUB00	Total/NA	Solid	None	
160-3235-1 MS	L100816BUB00	Total/NA	Solid	None	
160-3235-1 MSD	L100816BUB00	Total/NA	Solid	None	
160-3235-2	L100817BUB00	Total/NA	Solid	None	
160-3235-3	L100818BUB00	Total/NA	Solid	None	
160-3235-4	L100819BUB00	Total/NA	Solid	None	
160-3235-5	L100820BUB00	Total/NA	Solid	None	
160-3235-6	L100821BUB00	Total/NA	Solid	None	
160-3235-7	L100822BUB00	Total/NA	Solid	None	
160-3235-8	L100823BUB00	Total/NA	Solid	None	
160-3235-9	L100824BUB00	Total/NA	Solid	None	
160-3235-10	L100825BUB00	Total/NA	Solid	None	
160-3235-11	L100826BUB00	Total/NA	Solid	None	
160-3235-12	L100827BUB00	Total/NA	Solid	None	
160-3235-13	L100828BUB00	Total/NA	Solid	None	
LCS 160-64842/2-A	Lab Control Sample	Total/NA	Solid	None	
MB 160-64842/1-A	Method Blank	Total/NA	Solid	None	

Leach Batch: 65001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-1	L100816BUB00	Total/NA	Solid	Dry and Grind	
160-3235-1 DU	L100816BUB00	Total/NA	Solid	Dry and Grind	
160-3235-2	L100817BUB00	Total/NA	Solid	Dry and Grind	
160-3235-3	L100818BUB00	Total/NA	Solid	Dry and Grind	
160-3235-4	L100819BUB00	Total/NA	Solid	Dry and Grind	
160-3235-5	L100820BUB00	Total/NA	Solid	Dry and Grind	
160-3235-6	L100821BUB00	Total/NA	Solid	Dry and Grind	
160-3235-7	L100822BUB00	Total/NA	Solid	Dry and Grind	
160-3235-8	L100823BUB00	Total/NA	Solid	Dry and Grind	
160-3235-9	L100824BUB00	Total/NA	Solid	Dry and Grind	
160-3235-10	L100825BUB00	Total/NA	Solid	Dry and Grind	
160-3235-11	L100826BUB00	Total/NA	Solid	Dry and Grind	
160-3235-12	L100827BUB00	Total/NA	Solid	Dry and Grind	
160-3235-13	L100828BUB00	Total/NA	Solid	Dry and Grind	

TestAmerica St. Louis

QC Association Summary

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Rad (Continued)

Prep Batch: 65535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3235-1	L100816BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-1 DU	L100816BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-2	L100817BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-3	L100818BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-4	L100819BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-5	L100820BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-6	L100821BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-7	L100822BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-8	L100823BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-9	L100824BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-10	L100825BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-11	L100826BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-12	L100827BUB00	Total/NA	Solid	Fill_Geo-0	65001
160-3235-13	L100828BUB00	Total/NA	Solid	Fill_Geo-0	65001
LCS 160-65535/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-0	
MB 160-65535/1-A	Method Blank	Total/NA	Solid	Fill_Geo-0	

Tracer/Carrier Summary

Client: Westinghouse Electric Company LLC
Project/Site: RFP-CBA-022 (21 DAY TAT)

TestAmerica Job ID: 160-3235-1

Method: 6020A - Metals (ICP/MS), Tc-99 in Activity

Matrix: Solid

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Re (30-110)	
160-3235-1	L100816BUB00	103	
160-3235-1 MS	L100816BUB00	101	
160-3235-1 MSD	L100816BUB00	102	
160-3235-2	L100817BUB00	71	
160-3235-3	L100818BUB00	64	
160-3235-4	L100819BUB00	65	
160-3235-5	L100820BUB00	67	
160-3235-6	L100821BUB00	73	
160-3235-7	L100822BUB00	80	
160-3235-8	L100823BUB00	76	
160-3235-9	L100824BUB00	67	
160-3235-10	L100825BUB00	56	
160-3235-11	L100826BUB00	83	
160-3235-12	L100827BUB00	71	
160-3235-13	L100828BUB00	58	
LCS 160-64842/2-A	Lab Control Sample	107	
MB 160-64842/1-A	Method Blank	72	

Tracer/Carrier Legend

Re = Re