SAF-RC-155
618-10 & 618-11 Field Remediation – Other
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required KW 2/3/16
INITIAL/DATE

COMMENTS:

SDG JP1023 **SAF-RC-155**

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Sample Location: 618-10 bottle drums/grout batch, GR-289B

ANALYTICAL REPORT

Job Number: 280-78848-1

SDG Number: JP1023

Job Description: SAF# RC-155

For:
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

Attention: Joan H Kessner

Approved for release.
Kae E Yoder
Senior Project Manager
1/19/2016 5:14 PM

Kae E Yoder, Senior Project Manager
4955 Yarrow Street, Arvada, CO, 80002
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01/19/2016

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Job Number: 280-78848-1

SDG #: JP1023
SAF#: RC-155

Date SDG Closed: January 14, 2016
Data Deliverable: 3 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1V895	280-78848-1	1311-6010-7470	1311-6010B-7470A

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With 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. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. 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.

RECEIPT
The sample was received on 1/14/2016 10:20 AM; the sample arrived intact, but at an elevated temperature of 10.8º C. No ice was present in the cooler. The client was notified on 1/15/2016.

TCLP METALS - SW846 1311/6010B/7470A
Serial dilution of a digestate in batch 280-310662 indicates that physical and chemical interferences are present for Barium and Sodium. Results have been flagged with an “X”.

Sodium was recovered outside the control limits, biased high, in the LCS associated with batch 280-310662, and the associated sample result has been flagged “N”. In addition, Sodium is present at a level greater than the reporting limit in the method blank associated with batch 280-310662. The reagent used to make the blank fluid for this TCLP extraction contains Sodium; therefore, data are reported.

It can be noted that the sample amount was greater than four times the spike amount for Sodium in the Matrix Spike performed on sample J1V895; therefore, control limits are not applicable.

No other anomalies were encountered.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Lab Section	Qualifier	Description
Metals		
	U	Analyzed for but not detected.
	B	Estimated result. Result is less than the RL, but greater than MDL
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	N	Recovery exceeds upper or lower control limits
	X	Serial dilution in the analytical batch indicates that physical and chemical interferences are present.
	C	The analyte was detected in both the sample and the assoicated QC blank, and the sample concentration was </= 5X the blank concentration.

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-78848-1	J1V895	Solid	01/11/2016 1518	01/14/2016 1020

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
TCLP Metals (ICP)	TAL DEN	SW846 6010B	
TCLP Extraction	TAL DEN		SW846 1311
Preparation, Total Metals	TAL DEN		SW846 3010A
TCLP Mercury	TAL DEN	SW846 7470A	
TCLP Extraction	TAL DEN		SW846 1311
Preparation, Mercury	TAL DEN		SW846 7470A

Lab References:

TAL DEN = TestAmerica Denver

Method References:

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

METHOD / ANALYST SUMMARY

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Method	Analyst	Analyst ID
SW846 6010B	Rhoades, Chris R	CRR
SW846 6010B	Scott, Samantha J	SJS
SW846 7470A	Henning, Christopher D	CDH

SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Client Sample ID: **J1V895**

Lab Sample ID: 280-78848-1
Client Matrix: Solid

Date Sampled: 01/11/2016 1518
Date Received: 01/14/2016 1020

6010B TCLP Metals (ICP)-TCLP

Analysis Method:	6010B	Analysis Batch:	280-310964	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-310662	Lab File ID:	25A011816.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/18/2016 1045			Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Aluminum		0.69	B	0.090	10.0
Antimony		0.016	U	0.016	0.20
Arsenic		0.022	U	0.022	0.50
Barium		2.0	X	0.0020	1.0
Beryllium		0.0020	U	0.0020	0.030
Cadmium		0.0020	U	0.0020	0.10
Chromium		0.10	B	0.0030	0.50
Lead		0.013	U	0.013	0.50
Nickel		0.0083	B	0.0060	0.40
Selenium		0.024	U	0.024	0.10
Silver		0.0040	U	0.0040	0.50
Sodium		1640	C N X	0.46	50.0
Vanadium		0.0060	U	0.0060	0.10
Zinc		0.022	U	0.022	2.0

Analysis Method:	6010B	Analysis Batch:	280-311083	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-310662	Lab File ID:	25a011916a.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/19/2016 1537			Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Thallium		0.024	U	0.024	0.10

7470A TCLP Mercury-TCLP

Analysis Method:	7470A	Analysis Batch:	280-310997	Instrument ID:	MT_034
Prep Method:	7470A	Prep Batch:	280-310832	Lab File ID:	160119ba.txt
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	30 mL
Analysis Date:	01/18/2016 1555			Final Weight/Volume:	50 mL
Prep Date:	01/18/2016 1005				
Leach Date:	01/14/2016 1455				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		0.000030	U	0.000030	0.0020

QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

TCLP SPLPE Leachate Blank - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	LB 280-310575/1-B	Analysis Batch:	280-310964	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25A011816.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/18/2016 1039	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Result	Qual	MDL	RL
Aluminum	0.090	U	0.090	10.0
Antimony	0.016	U	0.016	0.20
Arsenic	0.022	U	0.022	0.50
Barium	0.0020	U	0.0020	1.0
Beryllium	0.0020	U	0.0020	0.030
Cadmium	0.0020	U	0.0020	0.10
Chromium	0.0030	U	0.0030	0.50
Lead	0.013	U	0.013	0.50
Nickel	0.0060	U	0.0060	0.40
Selenium	0.024	U	0.024	0.10
Silver	0.0040	U	0.0040	0.50
Sodium	1670		0.46	50.0
Vanadium	0.0060	U	0.0060	0.10
Zinc	0.022	U	0.022	2.0

TCLP SPLPE Leachate Blank - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	LB 280-310575/1-B	Analysis Batch:	280-311083	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25a011916a.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/19/2016 1531	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Result	Qual	MDL	RL
Thallium	0.024	U	0.024	0.10

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Lab Control Sample - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	LCS 280-310575/2-B	Analysis Batch:	280-310964	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25A011816.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/18/2016 1042	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	2.00	1.91	95	80 - 120	B
Antimony	0.500	0.532	106	80 - 120	
Arsenic	4.00	4.09	102	80 - 120	
Barium	12.0	12.56	105	80 - 120	
Beryllium	0.0500	0.0515	103	80 - 120	
Cadmium	1.10	1.14	103	80 - 120	
Chromium	5.20	5.26	101	80 - 120	
Lead	5.50	5.46	99	80 - 120	
Nickel	0.500	0.502	100	80 - 120	
Selenium	3.00	3.03	101	80 - 120	
Silver	1.05	1.06	101	80 - 120	
Sodium	50.0	1670	3340	80 - 120	N
Vanadium	0.500	0.458	92	80 - 120	
Zinc	2.50	2.46	98	80 - 120	

Lab Control Sample - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	LCS 280-310575/2-B	Analysis Batch:	280-311083	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25a011916a.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/19/2016 1534	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Thallium	2.00	1.98	99	80 - 120	

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Matrix Spike - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	280-78848-1	Analysis Batch:	280-310964	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25A011816.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/18/2016 1053	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	0.69	B	2.00	2.39	85	80 - 120	B
Antimony	0.016	U	0.500	0.517	103	80 - 120	
Arsenic	0.022	U	4.00	3.90	97	80 - 120	
Barium	2.0		12.0	13.74	98	80 - 120	
Beryllium	0.0020	U	0.0500	0.0483	97	80 - 120	
Cadmium	0.0020	U	1.10	1.08	98	80 - 120	
Chromium	0.10	B	5.20	5.02	95	80 - 120	
Lead	0.013	U	5.50	5.16	94	80 - 120	
Nickel	0.0083	B	0.500	0.478	94	80 - 120	
Selenium	0.024	U	3.00	2.88	96	80 - 120	
Silver	0.0040	U	1.05	1.01	97	80 - 120	
Sodium	1640		50.0	1590	-102	80 - 120	C 4
Vanadium	0.0060	U	0.500	0.428	86	80 - 120	
Zinc	0.022	U	2.50	2.24	90	80 - 120	

Matrix Spike - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	280-78848-1	Analysis Batch:	280-311083	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25a011916a.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/19/2016 1545	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Thallium	0.024	U	2.00	1.81	91	80 - 120	

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Duplicate - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	280-78848-1	Analysis Batch:	280-310964	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25A011816.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/18/2016 1050	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	0.69	B	0.658	5	20	B
Antimony	0.016	U	0.016	NC	20	U
Arsenic	0.022	U	0.022	NC	20	U
Barium	2.0		1.88	4	20	
Beryllium	0.0020	U	0.0020	NC	20	U
Cadmium	0.0020	U	0.0020	NC	20	U
Chromium	0.10	B	0.0940	8	20	B
Lead	0.013	U	0.013	NC	20	U
Nickel	0.0083	B	0.00795	4	20	B
Selenium	0.024	U	0.024	NC	20	U
Silver	0.0040	U	0.0040	NC	20	U
Sodium	1640		1582	4	20	C N
Vanadium	0.0060	U	0.0060	NC	20	U
Zinc	0.022	U	0.022	NC	20	U

Duplicate - Batch: 280-310662

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	280-78848-1	Analysis Batch:	280-311083	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-310662	Lab File ID:	25a011916a.asc
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	10 mL
Analysis Date:	01/19/2016 1542	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/15/2016 1425				
Leach Date:	01/14/2016 1455				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Thallium	0.024	U	0.024	NC	20	U

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

TCLP SPLPE Leachate Blank - Batch: 280-310832

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	LB 280-310575/1-C	Analysis Batch:	280-310997	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-310832	Lab File ID:	160119ba.txt
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	30 mL
Analysis Date:	01/18/2016 1550	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/18/2016 1005				
Leach Date:	01/14/2016 1455				

Analyte	Result	Qual	MDL	RL
Mercury	0.000030	U	0.000030	0.0020

Lab Control Sample - Batch: 280-310832

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	LCS 280-310575/2-C	Analysis Batch:	280-310997	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-310832	Lab File ID:	160119ba.txt
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	30 mL
Analysis Date:	01/18/2016 1553	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/18/2016 1005				
Leach Date:	01/14/2016 1455				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00500	0.00550	110	90 - 116	

Matrix Spike - Batch: 280-310832

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	280-78848-1	Analysis Batch:	280-310997	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-310832	Lab File ID:	160119ba.txt
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	30 mL
Analysis Date:	01/18/2016 1604	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/18/2016 1005				
Leach Date:	01/14/2016 1455				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.000030	U	0.00500	0.00558	112	90 - 116	

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

Duplicate - Batch: 280-310832

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	280-78848-1	Analysis Batch:	280-310997	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-310832	Lab File ID:	160119ba.txt
Dilution:	1.0	Leach Batch:	280-310575	Initial Weight/Volume:	30 mL
Analysis Date:	01/18/2016 1557	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	01/18/2016 1005				
Leach Date:	01/14/2016 1455				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.000030	U	0.000030	NC	20	U

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-310575					
LCS 280-310575/2-B	Lab Control Sample	P	Solid	1311	
LCS 280-310575/2-C	Lab Control Sample	P	Solid	1311	
LB 280-310575/1-B	TCLP SPLPE Leachate Blank	P	Solid	1311	
LB 280-310575/1-C	TCLP SPLPE Leachate Blank	P	Solid	1311	
280-78848-1	J1V895	P	Solid	1311	
280-78848-1DU	Duplicate	P	Solid	1311	
280-78848-1MS	Matrix Spike	P	Solid	1311	
Prep Batch: 280-310662					
LCS 280-310575/2-B	Lab Control Sample	P	Solid	3010A	280-310575
LB 280-310575/1-B	TCLP SPLPE Leachate Blank	P	Solid	3010A	280-310575
280-78848-1	J1V895	P	Solid	3010A	280-310575
280-78848-1DU	Duplicate	P	Solid	3010A	280-310575
280-78848-1MS	Matrix Spike	P	Solid	3010A	280-310575
Prep Batch: 280-310832					
LCS 280-310575/2-C	Lab Control Sample	P	Solid	7470A	280-310575
LB 280-310575/1-C	TCLP SPLPE Leachate Blank	P	Solid	7470A	280-310575
280-78848-1	J1V895	P	Solid	7470A	280-310575
280-78848-1DU	Duplicate	P	Solid	7470A	280-310575
280-78848-1MS	Matrix Spike	P	Solid	7470A	280-310575
Analysis Batch:280-310964					
LCS 280-310575/2-B	Lab Control Sample	P	Solid	6010B	280-310662
LB 280-310575/1-B	TCLP SPLPE Leachate Blank	P	Solid	6010B	280-310662
280-78848-1	J1V895	P	Solid	6010B	280-310662
280-78848-1DU	Duplicate	P	Solid	6010B	280-310662
280-78848-1MS	Matrix Spike	P	Solid	6010B	280-310662
Analysis Batch:280-310997					
LCS 280-310575/2-C	Lab Control Sample	P	Solid	7470A	280-310832
LB 280-310575/1-C	TCLP SPLPE Leachate Blank	P	Solid	7470A	280-310832
280-78848-1	J1V895	P	Solid	7470A	280-310832
280-78848-1DU	Duplicate	P	Solid	7470A	280-310832
280-78848-1MS	Matrix Spike	P	Solid	7470A	280-310832
Analysis Batch:280-311083					
LCS 280-310575/2-B	Lab Control Sample	P	Solid	6010B	280-310662
LB 280-310575/1-B	TCLP SPLPE Leachate Blank	P	Solid	6010B	280-310662
280-78848-1	J1V895	P	Solid	6010B	280-310662
280-78848-1DU	Duplicate	P	Solid	6010B	280-310662
280-78848-1MS	Matrix Spike	P	Solid	6010B	280-310662

Client: Washington Closure Hanford

Job Number: 280-78848-1
Sdg Number: JP1023

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
P = TCLP

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-155-200

Collector: BECKER, DJ	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9A	Data Turnaround: 3 Day / 3 Day TRE 1-12-16		
Project Designation: 618-10 & 618-11 Remediation	Sampling Location: 618-10 bottle drums/grout batch # GR-289B		SAF No.: RC-155
Ice Chest No.: WCH-13-SMS	Field Logbook No.: EL-1664-01	COA: R618102F20	Method of Shipment: Local Delivery
Shipped To: TestAmerica Richland	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A TRE 1-12-16

Other Labs Shipped To: TestAmerica Denver TRE 1-12-16

280-78848 Chain of Custody

POSSIBLE SAMPLE HAZARDS/REMARKS

radioactive < DOT Limits TRE 1-12-16

Special Handling and/or Storage

Trans ship RCF to TARL then
Trans ship to TA-DEN

Preservation	None	None	None	None	None	none			TRE 1-12-16	None
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P				G/P
No. of Container(s)	1	0	0	0	0	0				0
Volume	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL				1000mL
Sample Analysis	Isotopic Plutonium	Isotopic Uranium	Carbon-14	Nickel-63; Strontium-89,90 – Total Sr	Technetium-99	RCF Shipping screen				GEA *see last note below

Sample No.	Matrix	Sample Date	Sample Time										
JTV895	OTHER	01/11/16	1518	X	X	X	X	X	X	~~39196~~	~~396g~~	TRE 1-12-16	X

CHAIN OF POSSESSION / **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID BECKER	01-11-16 1530	C. Martinez / C. Martinez	1530 01/11/16
C. Martinez / C. Martinez	01/11/16 1550	MO-6107 RMA	1550 01/11/16
MO-6107 RMA	1-12-16 0225	T.R. Edmundson / T.R. Edmundson	1-12-16 0225
T.R. Edmundson / T.R. Edmundson	1-12-16 0800	RCF D. Miller / D. Miller	0800 1-12-16
RCF D. Miller / D. Miller	1-12-16 1400	T.R. Edmundson / T.R. Edmundson	1-12-16 1400
T.R. Edmundson / T.R. Edmundson	WCH 1-12-16 1505	J. Friesz, TARL	1/12/16 1505
J. Beck / J. Beck TARL	1-13-16 1115		1020 14 Jan 16

FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

Run Pu-241 from material in ISO-PU container.
*Trans ship remaining material to TA-DEN and run ICP metals TCLP analysis for the following analytes:
* 1311/6010, alumimam, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, selenium, silver, sodium, thallium, vanadium, zinc.
* 1311/7470 mercury TRE 1-12-16
* Also run GEA prior to trans-shipping.

J6A120420
Due 1-19-16

M74 EV

10.8197TO.0 RH Jan 16

JP1023

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY K.W. Pertel DATE 1-12-16

WCH-EE-011

Temp 10.8 IR# 7
CF +0.0 Initials JT
Date: 01/14/16
No ICE

#90 w/ permission

90 w/ permission D.B. 1-15-16

Project 28002142
Report Due: 1/19/2016
TALs TAT: 3-Day-Rush D.B. 1-15-16

Sample Check-in List

Date/Time Received: 1-14-16 1020 **GM Screen Result** 12 **microR/hr**

Client: Washington Closure Hanford **SDG #:** JP1023 D.B. 1-15-16 NA[ ] **SAF #:** RC-155 NA [ ]

Job Number: 74 788218 **Chain of Custody #** JP1023 RC-155-200 D.B. 1-15-16

Shipping Container ID: N/a **Air Bill #** 7754 0848 1894

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? NA [ ] Yes [✓] No [ ]
4. Cooler Temperature °C: 10.8 NA [ ] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? NA [ ] Yes [ ] No [✓]
8. Samples have: ~~X~~ Tape JK 1-14-16 ___ Custody Seals ___ X ___ Hazard Labels ___ X ___ Appropriate Sample Labels
9. Samples are: ___ X ___ In Good Condition ___ Broken ___ Leaking ___ Have Air Bubbles (Only for samples requiring no head space.)
10. Sample pH taken? NA [X] pH<2 [ ] pH>2 [ ] pH>9 [ ] **Amount HNO_3 Added** ___
11. Sample Location, Sample Collector Listed? * yes
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [✓] No [X] D.B. 1-15-16
13. Description of anomalies (include sample numbers): Sample received at elevated temperature of 10.8 °C; No ice was present. D.B. 1-15-16

Sample Custodian: [signature] **Date:** 1-14-16

Client Sample ID	Analysis Requested	Condition	Comments/Action
JJV895	TCLP metals		Proceed w/ analysis

Client Informed on 1-15-16 by D.B. Person Contacted Joan Kessner

[X] No action necessary; process as is.

Project Manager Darlene Bandy Date 1-15-16

LS-023, Rev. 7, 1/08

Do Not Lift Using This Tag

ORIGIN ID:PSCA (509) 375-3131
SHIPPING DEPT.
TESTAMERICA LABORATORIES
2800 GEORGE WASHINGTON WAY

RICHLAND, WA 99354
UNITED STATES US

SHIP DATE: 13JAN16
ACTWGT: 3.00 LB
CAD: 1033413/INET3670

BILL RECIPIENT

Part # 163013-435 RRD 04/11

TO SAMPLE RECEIVING DENVER
TESTAMERICA DENVER (WCH)
4955 YARROW ST

ARVADA CO 80002
(303) 736-0100 REF: WCH
INV:
PO: DEPT:

FedEx Express

TRK# 0201 7754 0848 1894

THU - 14 JAN 10:30A
PRIORITY OVERNIGHT

XH WHHA

80002
CO-US DEN

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

TestAmerica Inc

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: TARL

Data Package Contains 66 *Pages*

Report No.: 68063

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
JP1023	RC-155	J1V895	J6A120420-1	M74EV1AG	9M74EV10	6013019
		J1V895	J6A120420-1	M74EV1AD	9M74EV10	6013022
		J1V895	J6A120420-1	M74EV1AF	9M74EV10	6013023
		J1V895	J6A120420-1	M74EV1AH	9M74EV10	6013024
		J1V895	J6A120420-1	M74EV1AC	9M74EV10	6013025
		J1V895	J6A120420-1	M74EV2AA	9M74EV20	6013043
		J1V895	J6A120420-1	M74EV2AT	9M74EV20	6018027
		J1V895	J6A120420-1	M74EV4AE	9M74EV40	6022017

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

January 28, 2016

Attention: Joan Kessner

SAF Number	:	RC-155
Date SDG Closed	:	January 12, 2016
Number of Samples	:	One (1)
Sample Type	:	Other Solid
SDG Number	:	JP1023
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On January 12, 2016, one other solid sample was received at TestAmerica for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1V895	M74EV	OTHER	1/12/16

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-001
Uranium 234, 235 and 238 by method RL-ALP-015
Gas Proportional Counting
Strontium-90 by method RL-GPC-010

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001
Liquid Scintillation Counting
Technetium-99 by method RL-LSC-014
Carbon-14 by method RL-LSC-008
Nickel-63 by method RL-LCS-017
Plutonium-241 by method RL-ALP-002

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-001:
The batch was reanalyzed due to failed tracer yields and a high LCS recovery. In the reanalysis, the achieved MDA exceeds the CRDL due to the reduced sample aliquots based on the screening results. The FWHM slightly exceeds the limits for the tracer of the duplicate (J1V895); the duplicate sample has acceptable results. Except as noted; the LCS, batch blank, sample and sample duplicate (J1V895) results are within contractual requirements.

Uranium 234, 235 and 238 by method RL-ALP-015:
The LCS, batch blank, sample and sample duplicate (J1V895) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-010:
The LCS, batch blank, sample and sample duplicate (J1V895) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:
The CRDL was not met for some of the analytes. Except as noted, the LCS, batch blank, sample and sample duplicate (J1V895) results are within contractual requirements.

Liquid Scintillation Counting
Technetium-99 by method RL-LSC-014:
The LCS, batch blank, sample, sample duplicate (J1V895) and sample matrix spike (J1V895) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:
The LCS, batch blank, sample and sample duplicate (J1V895) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:
The LCS, batch blank, sample and sample duplicate (J1V895) results are within contractual requirements.

Plutonium-241 by method RL-ALP-002:
The achieved MDA exceeds the CRDL due to the reduced sample aliquots based on the initial analysis results. Except as noted; the LCS, batch blank, sample and sample duplicate (J1V895) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Rhonda Wagar
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
CSU (#s) ***u_c Combined Standard Uncert.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined standard uncertainty.* The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 28-Jan-16

TestAmerica Inc TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 68063

SDG No: JP1023

Batch	Client Id Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
6013024 C14_CHEM_LSC									
J1V895									
	M74EV1AH	C-14	9.22E-02 +- 1.6E-01	U	pCi/g	100%	3.29E-01	5.00E+01	
J1V895 DUP									
	M74EV1AQ	C-14	6.31E-02 +- 1.6E-01	U	pCi/g	100%	3.23E-01	5.00E+01	37.5
6022017 PUISO_IE_PRECIP_AEA									
J1V895									
	M74EV4AE	PU-238	4.75E+00 +- 8.4E+00	U	pCi/g	53%	1.37E+01	1.00E+00	
		PU239/40	9.98E+02 +- 4.1E+02		pCi/g	53%	1.12E+01	1.00E+00	
J1V895 DUP									
	M74EV2AV	PU-238	1.06E+01 +- 1.1E+01		pCi/g	70%	1.05E+01	1.00E+00	76.5
		PU239/40	1.03E+03 +- 4.2E+02		pCi/g	70%	8.79E+00	1.00E+00	3.4
6013043 UISO_IE_PLATE_AEA									
J1V895									
	M74EV2AA	U-234	1.04E+01 +- 3.0E+00		pCi/g	99%	4.56E-01	1.00E+00	
		U-235	1.48E+00 +- 9.3E-01		pCi/g	99%	4.56E-01	1.00E+00	
		U-238	5.93E+01 +- 1.2E+01		pCi/g	99%	5.23E-01	1.00E+00	
J1V895 DUP									
	M74EV2AL	U-234	9.28E+00 +- 2.9E+00		pCi/g	88%	6.13E-01	1.00E+00	11.3
		U-235	4.19E-01 +- 5.1E-01	U	pCi/g	88%	5.63E-01	1.00E+00	111.7
		U-238	6.69E+01 +- 1.3E+01		pCi/g	88%	5.63E-01	1.00E+00	12.1
6013019 GAMMA_GS									
J1V895									
	M74EV1AG	AMERICIUM 241	2.44E+01 +- 2.7E+00		pCi/g		3.59E-01		
		CO-60	-2.09E-03 +- 3.9E-02	U	pCi/g		7.10E-02	5.00E-02	
		CS-137	2.34E+00 +- 3.2E-01		pCi/g		6.84E-02	1.00E-01	
		EU-152	-5.95E-02 +- 1.1E-01	U	pCi/g		1.76E-01	1.00E-01	
		EU-154	2.55E-02 +- 1.3E-01	U	pCi/g		2.33E-01	1.00E-01	
		EU-155	6.25E-02 +- 8.7E-02	U	pCi/g		1.52E-01	1.00E-01	
		K-40	4.12E+00 +- 1.4E+00		pCi/g		5.96E-01		
J1V895 DUP									
	M74EV1AJ	AMERICIUM 241	1.98E+01 +- 2.2E+00		pCi/g		8.26E-02		20.6
		CO-60	-8.53E-03 +- 2.5E-02	U	pCi/g		4.29E-02	5.00E-02	-121.2
		CS-137	2.42E+00 +- 3.1E-01		pCi/g		3.98E-02	1.00E-01	3.5
		EU-152	2.57E-02 +- 5.2E-02	U	pCi/g		9.30E-02	1.00E-01	-503.6
		EU-154	-4.09E-02 +- 7.9E-02	U	pCi/g		1.35E-01	1.00E-01	-863.9
		EU-155	-5.63E-03 +- 3.7E-02	U	pCi/g		6.32E-02	1.00E-01	239.6
		K-40	3.56E+00 +- 9.2E-01		pCi/g		3.80E-01		14.5
6013025 SRTOT_SEP_PRECIP_GPC									

TestAmerica Inc

rptTALRchSaSummary2 V5.4.1
A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

Sample Results Summary

Date: 28-Jan-16

TestAmerica Inc TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 68063

SDG No: JP1023

Batch	Client Id Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
6013025 SRTOT_SEP_PRECIP_GPC									
J1V895									
	M74EV1AC	STRONTIUM	6.11E+01 +- 1.4E+01		pCi/g	75%	3.83E-01	1.00E+00	
J1V895 DUP									
	M74EV1AR	STRONTIUM	5.25E+01 +- 1.2E+01		pCi/g	78%	3.69E-01	1.00E+00	15.1
6013022 NI63_LSC									
J1V895									
	M74EV1AD	NI-63	2.18E+00 +- 4.9E+00	U	pCi/g	92%	6.86E+00	3.00E+01	
J1V895 DUP									
	M74EV1AM	NI-63	3.16E+00 +- 5.6E+00	U	pCi/g	93%	6.63E+00	3.00E+01	37.0
6013023 TC99_ETVDSK_LSC									
J1V895									
	M74EV1AF	TC-99	2.15E+00 +- 3.4E-01		pCi/g	100%	5.84E-01	1.50E+01	
J1V895 DUP									
	M74EV1AP	TC-99	2.04E+00 +- 3.4E-01		pCi/g	100%	5.89E-01	1.50E+01	5.1
6018027 PU241_IE_LSC									
J1V895									
	M74EV2AT	Pu-241	3.43E+02 +- 2.5E+02	U	pCi/g	53%	4.58E+02	1.50E+01	
J1V895 DUP									
	M74EV2AU	Pu-241	2.28E+02 +- 1.8E+02	U	pCi/g	70%	3.41E+02	1.50E+01	40.3

No. of Results: 34

TestAmerica Inc

rptTALRchSaSummary2 V5.4.1
A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

QC Results Summary

Date: 28-Jan-16

TestAmerica Inc TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 68063

SDG No.: JP1023

Batch Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
C14_CHEM_LSC								
6013024 BLANK QC,								
M74GL1AA	C-14	1.37E-01 +- 1.6E-01	U	pCi/g	100%			3.17E-01
6013024 LCS,								
M74GL1AC	C-14	7.24E+00 +- 5.8E-01		pCi/g	100%	101%	0.0	3.29E-01
PUISO_IE_PRECIP_AEA								
6022017 BLANK QC,								
M75FR1AA	PU-238	-9.36E-03 +- 3.4E-02	U	pCi/g	66%			8.72E-02
	PU239/40	-3.34E-03 +- 3.4E-02	U	pCi/g	66%			7.03E-02
6022017 LCS,								
M75FR1AC	PU239/40	9.67E-01 +- 4.4E-01		pCi/g	89%	107%	0.1	4.74E-02
UISO_IE_PLATE_AEA								
6013043 BLANK QC,								
M74H01AA	U-234	1.40E-02 +- 3.1E-02	U	pCi/g	82%			5.57E-02
	U-235	-1.22E-03 +- 3.0E-02	U	pCi/g	82%			5.57E-02
	U-238	0.00E+00 +- 3.0E-02	U	pCi/g	82%			5.14E-02
6013043 LCS,								
M74H01AC	U-234	3.11E+00 +- 6.8E-01		pCi/g	93%	99%	0.0	5.67E-02
	U-238	3.08E+00 +- 6.8E-01		pCi/g	93%	94%	-0.1	6.20E-02
GAMMA_GS								
6013019 BLANK QC,								
M74GF1AA	AMERICIUM 241	-4.40E-02 +- 1.3E-01	U	pCi/g				2.14E-01
	CO-60	-1.90E-02 +- 2.9E-02	U	pCi/g				4.88E-02
	CS-137	-1.41E-02 +- 2.6E-02	U	pCi/g				4.45E-02
	EU-152	2.31E-03 +- 5.8E-02	U	pCi/g				1.03E-01
	EU-154	2.56E-02 +- 7.8E-02	U	pCi/g				1.55E-01
	EU-155	3.04E-02 +- 5.2E-02	U	pCi/g				9.63E-02
	K-40	2.96E-01 +- 7.8E-01	U	pCi/g				4.84E-01
6013019 LCS,								
M74GF1AC	AMERICIUM 241	3.33E+01 +- 3.7E+00		pCi/g		83%	-0.2	1.25E-01
	CO-60	9.19E+00 +- 1.1E+00		pCi/g		88%	-0.1	7.29E-02
	CS-137	3.52E+01 +- 4.2E+00		pCi/g		89%	-0.1	8.77E-02
SRTOT_SEP_PRECIP_GPC								
6013025 BLANK QC,								
M74GM1AA	STRONTIUM	-9.82E-02 +- 1.8E-01	U	pCi/g	82%			3.42E-01
6013025 LCS,								
M74GM1AC	STRONTIUM	3.89E+00 +- 1.0E+00		pCi/g	83%	116%	0.2	3.70E-01
NI63_LSC								
6013022 BLANK QC,								
M74GJ1AA	NI-63	1.96E+00 +- 6.4E+00	U	pCi/g	90%			6.90E+00
6013022 LCS,								
M74GJ1AC	NI-63	2.65E+02 +- 3.8E+02		pCi/g	92%	89%	-0.1	6.87E+00

TestAmerica Inc **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V5.4.1 A2002 **U Qual** - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

QC Results Summary

Date: 28-Jan-16

TestAmerica Inc TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 68063

SDG No.: JP1023

Batch Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
TC99_ETVDSK_LSC								
6013023 BLANK QC,								
M74GK1AA	TC-99	4.73E-02 +- 2.7E-01	U	pCi/g	100%			5.72E-01
6013023 LCS,								
M74GK1AC	TC-99	3.10E+01 +- 1.1E+00		pCi/g	100%	93%	-0.1	5.70E-01
6013023 MATRIX SPIKE, J1V895								
M74EV1AN	TC-99	1.86E+02 +- 4.9E+00		pCi/g	100%	82%	-0.2	5.85E-01
PU241_IE_LSC								
6018027 BLANK QC,								
M74G92AA	Pu-241	-3.98E-01 +- 1.2E+00	U	pCi/g	66%			2.51E+00
6018027 LCS,								
M74G92AC	Pu-241	1.72E+02 +- 3.2E+01		pCi/g	89%	76%	-0.2	2.20E+00

No. of Results: 29

TestAmerica Inc
rptSTLRchQcSummary V5.4.1 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 28-Jan-16

Lab Name:	TestAmerica Inc	**SDG:**	JP1023	**Collection Date:**	1/11/2016 3:18:00 PM
Lot-Sample No.:	J6A120420-1	**Report No. :**	68063	**Received Date:**	1/12/2016 3:05:00 PM
Client Sample ID:	J1V895	**COC No. :**	RC-155-200	**Matrix:**	OTHER OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6013019	GAMMA_GS			**Work Order:**	M74EV1AG		**Report DB ID:**	9M74EV10				
AMERICIUM 241	**2.44E+01**		2.7E+00	2.7E+00	3.59E-01	pCi/g		*(67.9)*	1/13/16 01:58 p		65.4	GER6$1
								(18.2)			g	
CO-60	**-2.09E-03**	U	3.9E-02	3.9E-02	7.10E-02	pCi/g		*-0.03*	1/13/16 01:58 p		65.4	GER6$1
							5.00E-02	*-0.11*			g	
CS-137	**2.34E+00**		3.2E-01	3.2E-01	6.84E-02	pCi/g		*(34.1)*	1/13/16 01:58 p		65.4	GER6$1
							1.00E-01	*(14.7)*			g	
EU-152	**-5.95E-02**	U	1.1E-01	1.1E-01	1.76E-01	pCi/g		*-0.34*	1/13/16 01:58 p		65.4	GER6$1
							1.00E-01	*-(1.1)*			g	
EU-154	**2.55E-02**	U	1.3E-01	1.3E-01	2.33E-01	pCi/g		*0.11*	1/13/16 01:58 p		65.4	GER6$1
							1.00E-01	*0.41*			g	
EU-155	**6.25E-02**	U	8.7E-02	8.7E-02	1.52E-01	pCi/g		*0.41*	1/13/16 01:58 p		65.4	GER6$1
							1.00E-01	*(1.4)*			g	
K-40	**4.12E+00**		1.4E+00	1.4E+00	5.96E-01	pCi/g		*(6.9)*	1/13/16 01:58 p		65.4	GER6$1
								(5.8)			g	
Batch: 6013022	NI63_LSC			**Work Order:**	M74EV1AD		**Report DB ID:**	9M74EV10				
NI-63	**2.18E+00**	U	2.9E+00	4.9E+00	6.86E+00	pCi/g	92%	*0.32*	1/15/16 07:07 p		0.51	LSC4
						3.21E+00	3.00E+01	*0.89*			g	
Batch: 6013023	TC99_ETVDSK_LSC			**Work Order:**	M74EV1AF		**Report DB ID:**	9M74EV10				
TC-99	**2.15E+00**		3.1E-01	3.4E-01	5.84E-01	pCi/g	100%	*(3.7)*	1/17/16 12:05 p		2.0	LSC8
						2.80E-01	1.50E+01	*(12.6)*			g	
Batch: 6013024	C14_CHEM_LSC			**Work Order:**	M74EV1AH		**Report DB ID:**	9M74EV10				

TestAmerica Inc
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V5.4.1 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 28-Jan-16

Lab Name: TestAmerica Inc
Lot-Sample No.: J6A120420-1
Client Sample ID: J1V895

SDG: JP1023
Report No. : 68063
COC No. : RC-155-200

Collection Date: 1/11/2016 3:18:00 PM
Received Date: 1/12/2016 3:05:00 PM
Matrix: OTHER OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
C-14	9.22E-02	U	1.4E-01	1.6E-01	3.29E-01	pCi/g	100%	0.28	1/16/16 06:39 a		5.0	LSC4
						1.57E-01	5.00E+01	(1.1)			g	
Batch: 6013025	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M74EV1AC		**Report DB ID:**	9M74EV10				
STRONTIUM	6.11E+01		1.8E+00	1.4E+01	3.83E-01	pCi/g	75%	(159.8)	1/14/16 06:35 p		2.0	GPC31B
						1.73E-01	1.00E+00	(8.7)			g	
Batch: 6013043	UISO_IE_PLATE_AEA			**Work Order:**	M74EV2AA		**Report DB ID:**	9M74EV20				
U-234	1.04E+01		2.4E+00	3.0E+00	4.56E-01	pCi/g	99%	(22.8)	1/15/16 06:20 p		0.09978	ALP423
						9.67E-02	1.00E+00	(7.)			g	
U-235	1.48E+00		9.0E-01	9.3E-01	4.56E-01	pCi/g	99%	(3.2)	1/15/16 06:20 p		0.09978	ALP423
						9.67E-02	1.00E+00	(3.2)			g	
U-238	5.93E+01		5.7E+00	1.2E+01	5.23E-01	pCi/g	99%	(113.3)	1/15/16 06:20 p		0.09978	ALP423
						1.27E-01	1.00E+00	(10.)			g	
							Ratio U-234/238 = 0.2					
Batch: 6018027	PU241_IE_LSC			**Work Order:**	M74EV2AT		**Report DB ID:**	9M74EV20				
Pu-241	3.43E+02	U	2.0E+02	2.5E+02	4.58E+02	pCi/g	53%	0.75	1/28/16 03:04 a		0.00828	LSC8
						2.17E+02	1.50E+01	(2.8)			g	
Batch: 6022017	PUISO_IE_PRECIP_AEA			**Work Order:**	M74EV4AE		**Report DB ID:**	9M74EV40				
PU-238	4.75E+00	U	8.2E+00	8.4E+00	1.37E+01	pCi/g	53%	0.35	1/26/16 01:40 p		0.00828	ALP421
						3.90E+00	1.00E+00	(1.1)			g	
PU239/40	9.98E+02		1.1E+02	4.1E+02	1.12E+01	pCi/g	53%	(89.1)	1/26/16 01:40 p		0.00828	ALP421
						2.72E+00	1.00E+00	(4.9)			g	

TestAmerica Inc
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V5.4.1 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 28-Jan-16

Lab Name:	TestAmerica Inc	**SDG:**	JP1023	**Collection Date:**	1/11/2016 3:18:00 PM
Lot-Sample No.:	J6A120420-1	**Report No. :**	68063	**Received Date:**	1/12/2016 3:05:00 PM
Client Sample ID:	J1V895	**COC No. :**	RC-155-200	**Matrix:**	OTHER OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector

No. of Results: 17 **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

Date: 28-Jan-16

DUPLICATE RESULTS

Lab Name:	**TestAmerica Inc**	**SDG:**	JP1023	**Collection Date:**	1/11/2016 3:18:00 PM
Lot-Sample No.:	**J6A120420-1**	**Report No. :**	68063	**Received Date:**	1/12/2016 3:05:00 PM
Client Sample ID:	**J1V895 DUP**	**COC No. :**	RC-155-200	**Matrix:**	OTHER OTHERSOLID

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6013019	GAMMA_GS			**Work Order:** M74EV1AJ		**Report DB ID:** M74EV1JR			**Orig Sa DB ID:** 9M74EV10			
AMERICIUM 241	1.98E+01		2.2E+00	2.2E+00	8.26E-02	pCi/g		(239.9)	1/13/16 02:01 p		65.5	GER18$1
	2.44E+01		**RPD**	**20.6**				(18.)			g	
CO-60	-8.53E-03	U	2.5E-02	2.5E-02	4.29E-02	pCi/g		-0.2	1/13/16 02:01 p		65.5	GER18$1
	-2.09E-03	U	**RPD**	**-121.2**		5.00E-02		-0.7			g	
CS-137	2.42E+00		3.1E-01	3.1E-01	3.98E-02	pCi/g		(60.8)	1/13/16 02:01 p		65.5	GER18$1
	2.34E+00		**RPD**	**3.5**		1.00E-01		(15.7)			g	
EU-152	2.57E-02	U	5.2E-02	5.2E-02	9.30E-02	pCi/g		0.28	1/13/16 02:01 p		65.5	GER18$1
	-5.95E-02	U	**RPD**	**-503.6**		1.00E-01		0.99			g	
EU-154	-4.09E-02	U	7.9E-02	7.9E-02	1.35E-01	pCi/g		-0.3	1/13/16 02:01 p		65.5	GER18$1
	2.55E-02	U	**RPD**	**-863.9**		1.00E-01		-(1.)			g	
EU-155	-5.63E-03	U	3.7E-02	3.7E-02	6.32E-02	pCi/g		-0.09	1/13/16 02:01 p		65.5	GER18$1
	6.25E-02	U	**RPD**	**239.6**		1.00E-01		-0.31			g	
K-40	3.56E+00		9.2E-01	9.2E-01	3.80E-01	pCi/g		(9.4)	1/13/16 02:01 p		65.5	GER18$1
	4.12E+00		**RPD**	**14.5**				(7.7)			g	
Batch: 6013022	NI63_LSC			**Work Order:** M74EV1AM		**Report DB ID:** M74EV1MR			**Orig Sa DB ID:** 9M74EV10			
NI-63	3.16E+00	U	2.8E+00	5.6E+00	6.63E+00	pCi/g	93%	0.48	1/15/16 07:30 p		0.52	LSC4
	2.18E+00	U	**RPD**	**37.0**		3.00E+01		(1.1)			g	
Batch: 6013023	TC99_ETVDSK_LSC			**Work Order:** M74EV1AP		**Report DB ID:** M74EV1PR			**Orig Sa DB ID:** 9M74EV10			
TC-99	2.04E+00		3.1E-01	3.4E-01	5.89E-01	pCi/g	100%	(3.5)	1/17/16 02:10 p		2.0	LSC8
	2.15E+00		**RPD**	**5.1**		1.50E+01		(12.1)			g	

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4.1 A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

Date: 28-Jan-16

DUPLICATE RESULTS

Lab Name:	**TestAmerica Inc**	**SDG:**	JP1023	**Collection Date:**	1/11/2016 3:18:00 PM
Lot-Sample No.:	**J6A120420-1**	**Report No. :**	68063	**Received Date:**	1/12/2016 3:05:00 PM
Client Sample ID:	**J1V895 DUP**	**COC No. :**	RC-155-200	**Matrix:**	OTHER OTHERSOLID

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6013024	C14_CHEM_LSC			**Work Order:** M74EV1AQ		**Report DB ID:** M74EV1QR			**Orig Sa DB ID:** 9M74EV10			
C-14	6.31E-02	U	1.4E-01	1.6E-01	3.23E-01	pCi/g	100%	0.2	1/16/16 07:22 a		5.1	LSC4
	9.22E-02	U	**RPD**	**37.5**		5.00E+01		0.79			g	
Batch: 6013025	SRTOT_SEP_PRECIP_GPC			**Work Order:** M74EV1AR		**Report DB ID:** M74EV1RR			**Orig Sa DB ID:** 9M74EV10			
STRONTIUM	5.25E+01		1.6E+00	1.2E+01	3.69E-01	pCi/g	78%	(142.3)	1/14/16 06:35 p		2.02	GPC31C
	6.11E+01		**RPD**	**15.1**		1.00E+00		(8.7)			g	
Batch: 6013043	UISO_IE_PLATE_AEA			**Work Order:** M74EV2AL		**Report DB ID:** M74EV2LR			**Orig Sa DB ID:** 9M74EV20			
U-234	9.28E+00		2.3E+00	2.9E+00	6.13E-01	pCi/g	88%	(15.2)	1/15/16 06:21 p		0.0997	ALP424
	1.04E+01		**RPD**	**11.3**		1.00E+00		(6.5)			g	
U-235	4.19E-01	U	5.0E-01	5.1E-01	5.63E-01	pCi/g	88%	0.74	1/15/16 06:21 p		0.0997	ALP424
	1.48E+00		**RPD**	**111.7**		1.00E+00		(1.6)			g	
U-238	6.69E+01		6.2E+00	1.3E+01	5.63E-01	pCi/g	88%	(118.8)	1/15/16 06:21 p		0.0997	ALP424
	5.93E+01		**RPD**	**12.1**		1.00E+00		(9.9)			g	
						Ratio U-234/238 = 0.1			***Alpha Spec Result Sum = 7.7E+01***			
Batch: 6018027	PU241_IE_LSC			**Work Order:** M74EV2AU		**Report DB ID:** M74EV2UR			**Orig Sa DB ID:** 9M74EV20			
Pu-241	2.28E+02	U	1.5E+02	1.8E+02	3.41E+02	pCi/g	70%	0.67	1/28/16 04:06 a		0.00828	LSC8
	3.43E+02	U	**RPD**	**40.3**		1.50E+01		(2.6)			g	
									Alpha Spec Result Sum = 7.7E+01			
Batch: 6022017	PUISO_IE_PRECIP_AEA			**Work Order:** M74EV2AV		**Report DB ID:** M74EV2VR			**Orig Sa DB ID:** 9M74EV40			

TestAmerica Inc
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RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

Date: 28-Jan-16

DUPLICATE RESULTS

Lab Name:	**TestAmerica Inc**	**SDG:**	JP1023	**Collection Date:**	1/11/2016 3:18:00 PM
Lot-Sample No.:	**J6A120420-1**	**Report No. :**	68063	**Received Date:**	1/12/2016 3:05:00 PM
Client Sample ID:	**J1V895 DUP**	**COC No. :**	RC-155-200	**Matrix:**	OTHER OTHERSOLID

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
PU-238	1.06E+01		1.0E+01	1.1E+01	1.05E+01	pCi/g	70%	(1.)	1/26/16 01:39 p		0.00828	ALP436
	4.75E+00	U	**RPD**	**76.5**		1.00E+00		(1.9)			g	
PU239/40	1.03E+03		9.7E+01	4.2E+02	8.79E+00	pCi/g	70%	(117.5)	1/26/16 01:39 p		0.00828	ALP436
	9.98E+02		**RPD**	**3.4**		1.00E+00		(5.)			g	

Alpha Spec Result Sum = 1.0E+03

No. of Results: 17 **Comments:**

TestAmerica Inc
rptSTLRchDupV5.4.1 A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 28-Jan-16

Lab Name: TestAmerica Inc

Matrix: OTHER

SDG: JP1023

Report No. : 68063

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6013024	C14_CHEM_LSC			**Work Order:**	M74GL1AA		**Report DB ID:**	M74GL1AB				
C-14	1.37E-01	U	1.4E-01	1.6E-01	3.17E-01	pCi/g	100%	0.43	1/16/16 08:05 a		5.2	LSC4
					1.52E-01	5.00E+01		(1.7)			g	
Batch: 6022017	PUISO_IE_PRECIP_AEA			**Work Order:**	M75FR1AA		**Report DB ID:**	M75FR1AB				
PU-238	-9.36E-03	U	3.4E-02	3.4E-02	8.72E-02	pCi/g	66%	-0.11	1/26/16 01:41 p		1.2	ALP422
					2.66E-02	1.00E+00		-0.55			g	
PU239/40	-3.34E-03	U	3.4E-02	3.4E-02	7.03E-02	pCi/g	66%	-0.05	1/26/16 01:41 p		1.2	ALP422
					1.84E-02	1.00E+00		-0.2			g	
Batch: 6013043	UISO_IE_PLATE_AEA			**Work Order:**	M74H01AA		**Report DB ID:**	M74H01AB				
U-234	1.40E-02	U	3.0E-02	3.1E-02	5.57E-02	pCi/g	82%	0.25	1/15/16 10:04 p		1.04	ALP411
					1.28E-02	1.00E+00		0.92			g	
U-235	-1.22E-03	U	3.0E-02	3.0E-02	5.57E-02	pCi/g	82%	-0.02	1/15/16 10:04 p		1.04	ALP411
					1.28E-02	1.00E+00		-0.08			g	
U-238	0.00E+00	U	0.0E+00	3.0E-02	5.14E-02	pCi/g	82%	0.	1/15/16 10:04 p		1.04	ALP411
					1.09E-02	1.00E+00		0.			g	
Batch: 6013022	NI63_LSC			**Work Order:**	M74GJ1AA		**Report DB ID:**	M74GJ1AB				
NI-63	1.96E+00	U	2.9E+00	6.4E+00	6.90E+00	pCi/g	90%	0.28	1/15/16 07:53 p		0.52	LSC4
					3.23E+00	3.00E+01		0.61			g	
Batch: 6018027	PU241_IE_LSC			**Work Order:**	M74G92AA		**Report DB ID:**	M74G92AB				
Pu-241	-3.98E-01	U	1.0E+00	1.2E+00	2.51E+00	pCi/g	66%	-0.16	1/28/16 05:09 a		1.2	LSC8
					1.19E+00	1.50E+01		-0.68			g	
Batch: 6013023	TC99_ETVDSK_LSC			**Work Order:**	M74GK1AA		**Report DB ID:**	M74GK1AB				

TestAmerica Inc
rptSTLRchBlank
V5.4.1 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 28-Jan-16

Lab Name: TestAmerica Inc

Matrix: OTHER

SDG: JP1023

Report No. : 68063

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
TC-99	4.73E-02	U	2.4E-01	2.7E-01	5.72E-01	pCi/g	100%	0.08	1/17/16 03:13 p		2.04	LSC8
					2.74E-01	1.50E+01		0.36			g	
Batch: 6013019	GAMMA_GS			**Work Order:**	M74GF1AA		**Report DB ID:**	M74GF1AB				
AMERICIUM 241	-4.40E-02	U	1.3E-01	1.3E-01	2.14E-01	pCi/g		-0.21	1/13/16 05:40 p		52.0	GER11$1
								-0.68			g	
CO-60	-1.90E-02	U	2.9E-02	2.9E-02	4.88E-02	pCi/g		-0.39	1/13/16 05:40 p		52.0	GER11$1
						5.00E-02		-(1.3)			g	
CS-137	-1.41E-02	U	2.6E-02	2.6E-02	4.45E-02	pCi/g		-0.32	1/13/16 05:40 p		52.0	GER11$1
						1.00E-01		-(1.1)			g	
EU-152	2.31E-03	U	5.8E-02	5.8E-02	1.03E-01	pCi/g		0.02	1/13/16 05:40 p		52.0	GER11$1
						1.00E-01		0.08			g	
EU-154	2.56E-02	U	7.8E-02	7.8E-02	1.55E-01	pCi/g		0.17	1/13/16 05:40 p		52.0	GER11$1
						1.00E-01		0.66			g	
EU-155	3.04E-02	U	5.2E-02	5.2E-02	9.63E-02	pCi/g		0.32	1/13/16 05:40 p		52.0	GER11$1
						1.00E-01		(1.2)			g	
K-40	2.96E-01	U	7.8E-01	7.8E-01	4.84E-01	pCi/g		0.61	1/13/16 05:40 p		52.0	GER11$1
								0.76			g	
Batch: 6013025	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M74GM1AA		**Report DB ID:**	M74GM1AB				
STRONTIUM	-9.82E-02	U	1.7E-01	1.8E-01	3.42E-01	pCi/g	82%	-0.29	1/14/16 06:35 p		2.03	GPC31D
					1.54E-01	1.00E+00		-(1.1)			g	

No. of Results: 17 **Comments:**

TestAmerica Inc
rptSTLRchBlank
V5.4.1 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 28-Jan-16

Lab Name: TestAmerica Inc

Matrix: OTHER

SDG: JP1023

Report No. : 68063

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 6013024	C14_CHEM_LSC			**Work Order:**	M74GL1AC		**Report DB ID:**	M74GL1CS					
C-14	7.24E+00		3.1E-01	5.8E-01	3.29E-01	pCi/g	100%	7.18E+00	1.4E-01	101%	1/16/16 08:49 a	5.0	LSC4
							Rec Limits:	70	130	0.0		g	
Batch: 6022017	PUISO_IE_PRECIP_AEA			**Work Order:**	M75FR1AC		**Report DB ID:**	M75FR1CS					
PU239/40	9.67E-01		2.3E-01	4.4E-01	4.74E-02	pCi/g	89%	9.04E-01	9.1E-03	107%	1/26/16 01:42 p	1.0	ALP432
							Rec Limits:	70	130	0.1		g	
Batch: 6013043	UISO_IE_PLATE_AEA			**Work Order:**	M74H01AC		**Report DB ID:**	M74H01CS					
U-234	3.11E+00		4.1E-01	6.8E-01	5.67E-02	pCi/g	93%	3.13E+00	1.6E-02	99%	1/15/16 06:22 p	1.05	ALP429
							Rec Limits:	70	130	0.0		g	
U-238	3.08E+00		4.1E-01	6.8E-01	6.20E-02	pCi/g	93%	3.27E+00	1.7E-02	94%	1/15/16 06:22 p	1.05	ALP429
							Rec Limits:	70	130	-0.1		g	
Batch: 6013022	NI63_LSC			**Work Order:**	M74GJ1AC		**Report DB ID:**	M74GJ1CS					
NI-63	2.65E+02		9.8E+00	3.8E+02	6.87E+00	pCi/g	92%	2.99E+02	4.9E-01	89%	1/15/16 08:16 p	0.51	LSC4
							Rec Limits:	70	130	-0.1		g	
Batch: 6018027	PU241_IE_LSC			**Work Order:**	M74G92AC		**Report DB ID:**	M74G92CS					
Pu-241	1.72E+02		3.9E+00	3.2E+01	2.20E+00	pCi/g	89%	2.27E+02	8.1E+00	76%	1/28/16 06:12 a	1.0	LSC8
							Rec Limits:	70	130	-0.2		g	
Batch: 6013023	TC99_ETVDSK_LSC			**Work Order:**	M74GK1AC		**Report DB ID:**	M74GK1CS					
TC-99	3.10E+01		7.8E-01	1.1E+00	5.70E-01	pCi/g	100%	3.32E+01	1.9E-01	93%	1/17/16 04:16 p	2.04	LSC8
							Rec Limits:	70	130	-0.1		g	
Batch: 6013019	GAMMA_GS			**Work Order:**	M74GF1AC		**Report DB ID:**	M74GF1CS					
AMERICIUM 241	3.33E+01		3.7E+00	3.7E+00	1.25E-01	pCi/g		3.99E+01	5.6E-03	83%	1/13/16 05:41 p	54.51	GER18$1
							Rec Limits:	70	130	-0.2		g	

TestAmerica Inc **Bias** **- (Result/Expected)-1 as defined by ANSI N13.30.**

rptSTLRchLcs
V5.4.1 A2002

FORM II

LCS RESULTS

Date: 28-Jan-16

Lab Name: TestAmerica Inc

Matrix: OTHER

SDG: JP1023

Report No. : 68063

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
CO-60	9.19E+00		1.1E+00	1.1E+00	7.29E-02	pCi/g		1.05E+01	1.5E-03	88%	1/13/16 05:41 p	54.51	GER18$1
							Rec Limits:	70	130	-0.1		g	
CS-137	3.52E+01		4.2E+00	4.2E+00	8.77E-02	pCi/g		3.93E+01	5.6E-03	89%	1/13/16 05:41 p	54.51	GER18$1
							Rec Limits:	70	130	-0.1		g	
Batch: 6013025	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M74GM1AC		**Report DB ID:**	M74GM1CS					
STRONTIUM	3.89E+00		4.8E-01	1.0E+00	3.70E-01	pCi/g	83%	3.35E+00	2.4E-02	116%	1/14/16 06:35 p	2.01	GPC31A
							Rec Limits:	70	130	0.2		g	

No. of Results: 11 **Comments:**

TestAmerica Inc **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.4.1 A2002

FORM II

MATRIX SPIKE RESULTS

Date: 28-Jan-16

Lab Name: TestAmerica Inc **SDG:** JP1023

Lot-Sample No.: J6A120420-1, J1V895 **Report No. :** 68063 **Matrix:** OTHER OTHERSOLID

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	CSU (2 s)	MDC|MDA	Rpt Unit	Yield	Rec-overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6013023	**Work Order:** M74EV1AN			**Report DB ID:** M74EV1NW			**Orig Sa DB ID:** 9M74EV10					
TC-99	1.86E+02		1.9E+00	4.9E+00	5.85E-01	pCi/g	100%	82.43%	2.26E+02	1/17/16 01:08 p	2.01	TC99_ETVDSK_LSC
	2.15E+00								1.3E+00		g	LSC8

Number of Results: 1

Comments:

TestAmerica Inc
rptSTLRchMs
V5.4.1 A2002

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/27/2016 8:39:18 AM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6022017; RPUISO Pulso by ALP
SDG, Matrix: JP1023; OTHER

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes ✓	No	N/A
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes	No ✓	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes	No ✓	N/A
4.0 Raw Data			
4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes	No	N/A ✓
4.4 Were spectra reviewed/meet contractual requirements?	Yes ✓	No	N/A
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A
5.0 Other			
5.1 Are all nonconformances included and noted?	Yes ✓	No	N/A
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes	No	N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:

First Level [signature] **Date** 1/27/16

TestAmerica Richland
QAS_RADCALCv4.9.4

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 6022017

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?		✓	
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?	✓		
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: CRDL = 1.0 pCi/g
See NCM # 10-32308

Second Level Review: [signature] Date: 1/27/16

DR-001, Rev. 01, 10/30/2013

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #:	**10-32368**		
NCM Initiated By:	Lisa Antonson	Classification:	**Anomaly**
Date Opened:	01/27/2016	Status:	**PMREVIEW**
Date Closed:		Production Area:	Environmental - Prep
		Tests:	Pulso by ALP
		Lot #'s (Sample #'s):	J6A120420 (1), J6A220000 (17),
		QC Batches:	6022017,
Nonconformance:	Other (describe in detail)		
Subcategory:	Other (explanation required)		

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	01/27/2016	This batch is a reanalysis of the original batch due to failed tracer yields and high LCS recovery. The tracer yields were high due to tailing from the high activity of Pu-239. Sample volumes were reduced and the samples reanalyzed. In the reanalysis, MDA exceeds CRDL due to the volume reduction. The result for Pu-238 in the duplicate is right at MDA, while the result for the sample is below. Data is accepted. FWHM slightly exceeds limits for the tracer of the duplicate in this batch. Duplicates have acceptable results, data is accepted

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	01/27/2016	The batch was reanalyzed with reduced volume.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 1/27/2016

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/18/2016 12:16:58 PM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6013043; RUISO Uiso by ALP
SDG, Matrix: JP1023; OTHER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?			✓
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Lisa Anderson **Date** 1/18/16

TestAmerica Richland
QAS_RADCALCv4.9.4

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: C0013043

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?			✓
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: CRDL = 1.0pCi/g

Second Level Review: [signature] Date: 1/18/16

DR-001, Rev. 01, 10/30/2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/15/2016 8:27:35 AM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6013025; RSRTOT SrTot by GPC
SDG, Matrix: JP1023; OTHER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?	✓		
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?			✓
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level _____ **Date** 1/15/16

TestAmerica Richland
QAS_RADCALCv4.9.4

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 60130025

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?			✓
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: CRDL = 1.0 pCi/g

Second Level Review: Rhonda [illegible] Date: 4/15/16

DR-001, Rev. 01, 10/30/2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/14/2016 12:34:37 PM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6013019; RGAMMA Gamma by GER
SDG, Matrix: JP1023; OTHER

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A ✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	Yes	No ✓	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes	No ✓	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes	No ✓	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes	No ✓	N/A
4.0 Raw Data			
4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes	No	N/A ✓
4.4 Were spectra reviewed/meet contractual requirements?	Yes ✓	No	N/A
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A
5.0 Other			
5.1 Are all nonconformances included and noted?	Yes ✓	No	N/A
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes	No	N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:

First Level [signature] **Date** 1/14/16

TestAmerica Richland
QAS_RADCALCv4.9.4

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 6013019

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓	✓	
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?	✓		
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response:
See NCM #: 10-32338

Second Level Review: [signature] Date: 4/14/16

DR-001, Rev. 01, 10/30/2013

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-32338**
NCM Initiated By: Lisa Antonson
Date Opened: 01/14/2016
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Environmental - Prep
Tests: Gamma by GER
Lot #'s (Sample #'s): J6A120420 (1), J6A130000 (19),
QC Batches: 6013019,

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	01/14/2016	MDA exceeds CRDL for the following: Co-60, Eu-152, Eu-154 and Eu-155 for M74EV and the LCS Eu-154 for the duplicate. Eu-152 and Eu-154 in the blank

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	01/14/2016	None

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 1/14/2016

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/18/2016 12:26:19 PM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6013023; RTC99 Tc-99 by LSC
SDG, Matrix: JP1023; OTHER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	✓		
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?			✓
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level [signature] Date 1/18/16

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 60135023

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?	✓		
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?			✓
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: SPOL- 15pCi/g

Second Level Review: [signature] Date: 1/18/16

DR-001, Rev. 01, 10/30/2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/18/2016 12:52:34 PM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6013024; RC14LSCC C-14 Digestion
SDG, Matrix: JP1023; OTHER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?			✓
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level [signature] **Date** 1/18/16

TestAmerica Richland
QAS_RADCALCv4.9.4

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 6O1 J024

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?			✓
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: CRDL = 50 pCi/g

Second Level Review: [signature] Date: 1/18/16

DR-001, Rev. 01, 10/30/2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/19/2016 11:05:08 AM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6013022; RNI63 Ni-63 by LSC
SDG, Matrix: JP1023; OTHER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?	✓		
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?			✓
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level [signature] **Date** 1/19/16

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 601322

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?			✓
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: CRDL = 30 pCi/g

Second Level Review: [signature] Date: 1/19/16

DR-001, Rev. 01, 10/30/2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

1/28/2016 8:15:35 AM

Lot No., Due Date: J6A120420; 01/19/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6018027; RPU241 Pu-241 by LSC
SDG, Matrix: JP1023; OTHER

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes ✓	No	N/A
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes	No ✓	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes	No ✓	N/A
4.0 Raw Data			
4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes ✓	No	N/A
4.4 Were spectra reviewed/meet contractual requirements?	Yes	No	N/A ✓
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A
5.0 Other			
5.1 Are all nonconformances included and noted?	Yes ✓	No	N/A
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes	No	N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:
NCM 10-32371

First Level [signature] **Date** 1/28/16

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 6018027

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?		✓	
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances (NCM) included and noted?	✓		
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response: CRDL = 15pCi/g
See NCM #: 10-32371

Second Level Review: [signature] Date: 1/28/18

DR-001, Rev. 01, 10/30/2013

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-32371**
NCM Initiated By: Tom Mcginnis
Date Opened: 01/28/2016
Date Closed:

Classification: **Deficiency**
Status: PMREVIEW
Production Area: Environmental - Sep
Tests: Pu-241 by LSC
Lot #'s (Sample #'s): J6A120420 (1), J6A130000 (31),
QC Batches: 6018027,

Nonconformance: Batch Result Out of Limits
Subcategory: Duplicate agreement exceeds acceptance limit

Problem Description / Root Cause

Name	Date	Description
Tom Mcginnis	01/28/2016	The MDA for sample J6A120420 exceeds the CRDL due to extreme aliquot reduction based on initial analysis results. The duplicate agreement exceeds acceptance criteria, but both results are below the MDA. The batch blank and LCS meet acceptance criteria.

Corrective Action

Name	Date	Corrective Action
Tom Mcginnis	01/28/2016	The PM was notified of the batch deficiencies.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
	Response	Response Note			

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 1/28/2016

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-155-200

Collector BECKER, DJ	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 9A	**Data Turnaround** 7 Day		
Project Designation 618-10 & 618-11 Remediation	**Sampling Location** 618-10 bottle drums/grout batch # GR-289B		**SAF No.** RC-155
Ice Chest No. WCH-13-SMS	**Field Logbook No.** EL-1664-01	**COA** R618102F20	**Method of Shipment** Local Delivery
Shipped To TestAmerica Richland	**Offsite Property No.** N/A		**Bill of Lading/Air Bill No.** N/A TRE 1-12-16

Other Labs Shipped To TestAmerica Denver TRE 1-12-16

POSSIBLE SAMPLE HAZARDS/REMARKS
radioactive < DOT Limits TRE 1-12-16

Special Handling and/or Storage
Trans ship RCF to TARL then
Trans ship to TA-DEN

Preservation	None	None	None	None	None	none				TRE 1-12-16 None
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P				G/P
No. of Container(s)	1	0	0	0	0	0				0
Volume	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL				1000mL
Sample Analysis	Isotopic Plutonium	Isotopic Uranium	Carbon-14	Nickel-63; Strontium-89,90 – Total Sr	Technetium-99	RCF Shipping Screen				GEA *see last note below

Sample No.	Matrix	Sample Date	Sample Time										
J1V895	OTHER	01/11/16	1518	X	X	X	X	X	X	~~39191~~ ~~316g~~	TRE 1-12-16	X

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID BECKER	01.11.16 1530	C. Martinez/C. Martinez	01/11/16 1530
C. Martinez/C. Martinez	01/11/16 1550	MO-6107 RMA	01/11/16 1550
MO-6107 RMA	1-12-16 0725	T.R. Edmundson / T.R. Edmundson	1-12-16 0725
T.R. Edmundson / T.R. Edmundson	1-12-16 0800	RCF D. Miller / D. Miller	1-12-16 0800
RCF D. Miller / D. Miller	1-12-16 1400	T.R. Edmundson / T.R. Edmundson	1-12-16 1400
WCH T.R. Edmundson / T.R. Edmundson	1-12-16 1505	J. Friesz, TARL	1/12/16 1505

FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

Run Pu-241 from material in ISO-PU container.
*Trans ship remaining material to TA-DEN and run ICP metals TCLP analysis for the following analytes:
* 1311/6010, aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, selenium, silver, sodium, thallium, vanadium, zinc.
* 1311/7470 mercury
* Also run GEA prior to trans-shipping. TRE 1-12-16

J6A120420
Due 1-19-16
M74 EV

JP1023

Custodian unavailable to remove samples from controlled storage. Shipper removed samples, taking custody for shipment to lab.

REVIEWED BY KWpertele DATE 1-12-16

WCH-EE-011

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 1/12/16 1505 Container GM Screen Result: (Airlock) 0 cpm Initials[J]
Sample GM Screen Result (Sample Receiving) 0 cpm Initials[J]

Client: WCH SDG #: JP1023 SAF #: hc-155 NA [ ]

Lot Number: J6A120420

Chain of Custody # hc-155-200

Shipping Container ID or Air Bill Number : _____ NA [J]

Samples received inside shipping container/cooler/box Yes [J] Continue with 1 through 4. Initial appropriate response.
No [ ] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [J]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [J]
3. Cooler temperature: _____ °C NA [J]
4. Vermiculite/packing materials is NA [J] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [J] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1x4p
8. Sample holding times exceeded? NA [ ] Yes [ ] No [J]
9. Samples have: _____tape _____hazard labels J custody seals J appropriate sample labels
10. Matrix: B A (FLT, Wipe, Solid, Soil) _____I (Water) _____S (Air, Niosh 7400) _____T (Biological, Ni-63)
11. Samples:
    J are in good condition _____are leaking _____are broken
    _____have air bubbles (Only for samples requiring no head space) _____Other _____
12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [J]
    (If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO_3 added and pH after addition on table)
13. Were any anomalies identified in sample receipt? Yes [ ] No [J]
14. Description of anomalies (include sample numbers): NA [J] _____
15. Sample Location, Sample Collector Listed on COC? * Yes [ ] No [J]
    *For documentation only. No corrective action needed.
16. Additional Information: N/A

[ ] Client/Courier denied temperature check. [B] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:
Signature: _____ Date: 1/12/16

Client Notification needed? Yes [ ] No [X] Date: _____
By: _____
Person contacted: _____

[X] No action necessary, process as is

Project Manager _____ Date 1/13/16

LS-023 Rev. 17, 05/13 Page 1 of 1

1/25/2016 3:32:22 PM

Sample Preparation/Analysis

Balance Id:J79104,1120482733,,

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6022017 OTHER pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 6013019 AXTA, 6013020 6ASO, 6013021 7SSR, 6013022 AFS4, 6013023 ANS5, 6013024 5STC, 6013025 CHTH, 6013031 AGSP, 6013043 7SSR, 6018026 6ASO, 6018027 AGSP, 6020017 6ASO, 6022017 6ASO,

Prep Tech: McGinnisT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M74EV-2-AV-X		120.76g	1.00g,in	0.0083g	PUTC14402				100	~~435~~ 426	1432	1/26/16 gw	
J6A120420-1-DUP			1.00g,fi	120.76g,di	11/06/15,pd 01/01/10,r								
01/11/2016 15:18			AmtRec: 1XLP	#Containers: 1					Scr:	Alpha:			Beta:
2 M74EV-4-AE		120.76g	1.00g,in	0.0083g	PUTC14399					421			
J6A120420-1-SAMP			1.00g,fi	120.76g,di	11/06/15,pd 01/01/10,r								
01/11/2016 15:18			AmtRec: 1XLP	#Containers: 1					Scr:	Alpha:			Beta:
3 M75FR-1-AA-B			1.20g,in	1.20g	PUTC14409					422			
J6A220000-17-BLK					11/06/15,pd 01/01/10,r								
01/22/2016 11:05 pd			AmtRec:	#Containers: 1					Scr:	Alpha:			Beta:
4 M75FR-1-AC-C			1.00g,in	1.00g	241B0110					432			
J6A220000-17-LCS					01/13/16,pd 06/01/01,r								
01/22/2016 11:07 pd			AmtRec:	#Containers: 1					Scr:	Alpha:			Beta:

1/25/2016 3:32:23 PM

Sample Preparation/Analysis

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:J79104,1120482733,,

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6022017 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: McGinnisT,GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M74EV-DUP CommentsP-15-00340,S-15-00223,S-15-00241,P-15-00402,S-15-00234,S-13-00195

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV2AV-DUP Constituent List:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						

M75FR1AA-BLK:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						

M75FR1AC-LCS:

PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

M74EV2AV-DUP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

M75FR1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

M75FR1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/27/2016 8:38:33 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/27/2015, 2/1/2016, Batch: '6022017', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6022017						
AC		**Rev1C**	**WoodT**	1/26/2016 10:15:37		
SC			McginnIst	IsBatched	1/22/2016 10:11:29 AM	ICOC_RADCALC v4.9.0
SC			WoodT	InCnt1	1/26/2016 10:15:37 AM	RL-CI-008 REVISION 6
SC			DawkinsO	CalcC	1/26/2016 4:10:18 PM	RL-CI-008 REVISION 6
SC			antonsonI	Rev1C	1/27/2016 8:38:13 AM	RL-DR-001 Rev 7
AC			**DawkinsO**	1/26/2016 4:10:18 PM		
AC			**antonsonI**	1/27/2016 8:38:13		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

RIchland Wa.

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Grp Rec Cnt: 3

ICOCFractions v4.9.4

1/14/2016 3:57:24 PM

Sample Preparation/Analysis

PRIORITY

Balance Id:1120482733,J79104,1120373922,,

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

7S Ulso Prp PRP003/PRP005, Sep ALP009(ALP015)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6013043 OTHER pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 6013019 AXTA, 6013020 6ASO, 6013021 7SSR, 6013022 AFS4, 6013023 ANS5, 6013024 5STC, 6013025 CHTH, 6013031 AGSP, 6013043 7SSR,

Prep Tech: GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M74EV-2-AA J6A120420-1-SAMP 01/11/2016 15:18		120.76g	1.00g,in 12.05g,fi AmtRec: 1XLP	0.0998g 120.76g,di #Containers: 1	uitc33505 10/15/15,pd 06/15/01,r					423 Scr:	1916 Alpha:	1/15/16 AP Beta:	
2 M74EV-2-AL-X J6A120420-1-DUP 01/11/2016 15:18		120.76g	1.00g,in 12.04g,fi AmtRec: 1XLP	0.0997g 120.76g,di #Containers: 1	uitc33506 10/15/15,pd 06/15/01,r					424 Scr:	ANAL Alpha:	6 Beta:	
3 M74H0-1-AA-B J6A130000-43-BLK 01/14/2016 13:13 pd			1.04g,in AmtRec:	1.04g #Containers: 1	uitc33507 10/15/15,pd 06/15/01,r					~~425~~ 1/15/16 AP Scr:	411 Alpha:	2254 1/15/16 AP Beta:	
4 M74H0-1-AC-C J6A130000-43-LCS 01/14/2016 13:15 pd			1.05g,in AmtRec:	1.05g #Containers: 1	uish2074 10/30/15,pd 06/15/01,r					429 ~~430~~ 1/15/16 AP Scr:	1916 Alpha:	1/15/16 AP Beta:	

1/14/2016 3:57:25 PM

Sample Preparation/Analysis

7S Ulso Prp PRP003/PRP005, Sep ALP009(ALP015)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:J79104,1120373922,,

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6013043 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M74H0-BLK CommentsP-15-00558,P-15-00637,S-15-00102,S-15-00228

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV2AA-SAMP Constituent List:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

M74H01AA-BLK:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1.00E+00	pCi/g	LCL:	UCL:	RPD:

M74H01AC-LCS:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	Uranium	RDL:	pCi/g	LCL:70	UCL:130	RPD:35

M74EV2AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74H01AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74H01AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/18/2016 12:14:14 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/18/2015, 1/23/2016, Batch: '6013043', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6013043						
AC		**Rev1C**	**GarciaA**	1/14/2016 3:54:06 PM		
SC			Mcginnist	IsBatched	1/13/2016 2:09:04 PM	ICOC_RADCALC v4.9.0
SC			GarciaA	Prep1C	1/14/2016 3:54:06 PM	RL-PRP-003 REVISION 5
SC			DawkinsO	InCnt1	1/15/2016 4:46:37 PM	RL-CI-008 REVISION 6
SC			BullJ	CalcC	1/17/2016 8:52:02 AM	RL-CI-008 REVISION 6
SC			antonsonl	Rev1C	1/18/2016 12:13:52 PM	RL-DR-001 Rev 7
AC			**DawkinsO**	1/15/2016 4:46:37 PM		
AC			**BullJ**	1/17/2016 8:52:02		
AC			**antonsonl**	1/18/2016 12:13:52		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 4

ICOCFractions v4.9.4

1/14/2016 2:08:29 PM

Sample Preparation/Analysis

Balance Id:1120373922,B425712682

127642, Washington Closure Hanford LLC
Bechtel Hanford, Inc.

CH Sr-Total Prp PRP003, Sep GPC003
Off ~~TH~~ Total Strontium by GPC
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech: 01/14/2016 11:32,FentonS

Batch: 6013025 OTHER pCi/g PM, Quote: RW2, 27038

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M74EV-1-AC J6A120420-1-SAMP 01/11/2016 15:18	TM 1/15/16	~~120.76g~~	2.00g,in AmtRec: 1XLP	2.00g #Containers: 1	srtc5369 12/14/15		01/14/2016 11:32,s1	9.10mg	50min	31B	1900	1/14/1500	Scr: Alpha: Beta:
2 M74EV-1-AR-X J6A120420-1-DUP 01/11/2016 15:18	TM 1/15/16	~~120.76g~~	2.02g,in AmtRec: 1XLP	2.02g #Containers: 1	srtc5370 12/14/15		01/14/2016 00:00,s1	9.40mg		31C			Scr: Alpha: Beta:
3 M74GM-1-AA-B J6A130000-25-BLK 01/13/2016 14:56 pd			2.03g,in AmtRec:	2.03g #Containers: 1	srtc5371 12/14/15			9.90mg		31D			Scr: Alpha: Beta:
4 M74GM-1-AC-C J6A130000-25-LCS 01/13/2016 14:57 pd			2.01g,in AmtRec:	2.01g #Containers: 1	stsf0904 10/15/15			10.00mg		31A			Scr: Alpha: Beta:

1/13/2016 10:05:05 AM

Sample Preparation/Analysis

CH Sr-Total Prp PRP003, Sep GPC003
TH Total Strontium by GPC
5I CLIENT: HANFORD

Balance Id:,,

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

AnalyDueDate: 01/19/2016

Batch: 6013025 pCi/g
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV1AC-SAMP Constituent List:
Sr-90 RDL:1 pCi/g LCL:70 UCL:130 RPD:35
M74GM1AA-BLK:

M74GM1AC-LCS:

M74EV1AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GM1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GM1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/15/2016 8:26:45 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/15/2015, 1/20/2016, Batch: '6013025', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6013025						
AC		**Rev1C**	**FentonS**	1/14/2016 2:12:20 PM		
SC			campbellsc	IsBatched	1/13/2016 10:08:15 AM	ICOC_RADCALC v4.9.0
SC			FentonS	Sep1C	1/14/2016 2:12:20 PM	RL-GPC-010 REVISION 5
SC			DawkinsO	InCnt1	1/14/2016 3:30:29 PM	RL-CI-006 REVISION 6
SC			DawkinsO	CalcC	1/15/2016 12:18:00 AM	RL-CI-006 REVISION 6
SC			Mcginnist	Rev1C	1/15/2016 8:24:15 AM	RL-DR-001 Rev 7
AC			**DawkinsO**	1/14/2016 3:30:29 PM		
AC			**DawkinsO**	1/15/2016 12:18:00		
AC			**Mcginnist**	1/15/2016 8:24:15		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 4

ICOCFractions v4.9.4

1/13/2016 1:28:59 PM

Sample Preparation/Analysis

Balance Id:1120421763,,

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6013019 **OTHER** **pCi/g** **PM, Quote: RW2, 27038**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 6013019 AXTA, 6013020 6ASO, 6013021 7SSR, 6013022 AFS4, 6013023 ANS5, 6013024 5STC, 6013025 CHTH, 6013031 AGSP,

Prep Tech: ,GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M74EV-1-AG J6A120420-1-SAMP 01/11/2016 15:18			65.40g,in 286.10g,fi AmtRec: 1XLP	65.40g #Containers: 1			S25		200 min	G6	1721	1/13/16	
2 M74EV-1-AJ-X J6A120420-1-DUP 01/11/2016 15:18			65.50g,in AmtRec: 1XLP	65.50g #Containers: 1						G8			
3 M74GF-1-AA-B J6A130000-19-BLK 01/13/2016 10:04 pd			52.00g,in AmtRec:	52.00g #Containers: 1	OSBK					G11	2100	1/13/16	
4 M74GF-1-AC-C J6A130000-19-LCS 01/13/2016 10:04 pd			54.51g,in AmtRec:	54.51g #Containers: 1	Cal5446 05/19/05,pd 06/08/05,r					G18 ~~G13~~ 1/13/16	2104		

r

1/13/2016 1:29:00 PM

Sample Preparation/Analysis

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Balance Id:1120421763,,

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6013019 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV1AG-SAMP Constituent List:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Eu-154	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
K-40	RDL:	pCi/g	LCL:	UCL:	RPD:						

M74GF1AA-BLK:

M74GF1AC-LCS:

M74EV1AG-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GF1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GF1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/14/2016 12:31:05 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/14/2015, 1/19/2016, Batch: '6013019', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6013019						
AC		**Rev1C**	**GarciaA**	1/13/2016 1:29:44 PM		
SC			campbellsc	IsBatched	1/13/2016 10:08:00 AM	ICOC_RADCALC v4.9.0
SC			GarciaA	Prep1C	1/13/2016 1:29:44 PM	RL-PRP-003 REVISION 5
SC			WoodT	InCnt1	1/13/2016 1:38:28 PM	RL-CI-007 REVISION 5
SC			DawkinsO	CalcC	1/13/2016 11:58:14 PM	RL-CI-007 REVISION 5
SC			WoodT	CalcC	1/14/2016 10:22:25 AM	RL-CI-007 REVISION 5
SC			WoodT	CalcC	1/14/2016 11:25:13 AM	RL-CI-007 REVISION 5
SC			antonsonl	Rev1C	1/14/2016 12:30:32 PM	RL-DR-001 Rev 7
AC			**WoodT**	1/13/2016 1:38:28 PM		
AC			**DawkinsO**	1/13/2016 11:58:14		
AC			**WoodT**	1/14/2016 10:22:25		
AC			**WoodT**	1/14/2016 11:25:13		
AC			**antonsonl**	1/14/2016 12:30:32		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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Grp Rec Cnt: 6

ICOCFractions v4.9.4

1/14/2016 11:50:18 AM

Sample Preparation/Analysis

Balance Id:1120373922,,

127642, Washington Closure Hanford LLC
Bechtel Hanford, Inc.

AN Tc-99 Prp/Sep PRP003/LSC01~~3~~ 4 RW 4/14/16
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6013023 OTHER pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 6013019 AXTA, 6013020 6ASO, 6013021 7SSR, 6013022 AFS4, 6013023 ANS5, 6013024 5STC, 6013025 CHTH, 6013031 AGSP, 6013043 7SSR,

Prep Tech: GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M74EV-1-AF	1.00g		2.00g,in	2.00g									
J6A120420-1-SAMP													
01/11/2016 15:18			AmtRec: 1XLP		#Containers: 1				Scr:		Alpha:		Beta:
2 M74EV-1-AN-S	1.00g		2.01g,in	2.01g	tcsg3667 04/01/15,pd 09/01/96,r								
J6A120420-1-MS													
01/11/2016 15:18			AmtRec: 1XLP		#Containers: 1				Scr:		Alpha:		Beta:
3 M74EV-1-AP-X	1.00g		2.01g,in	2.01g									
J6A120420-1-DUP													
01/11/2016 15:18			AmtRec: 1XLP		#Containers: 1				Scr:		Alpha:		Beta:
4 M74GK-1-AA-B			2.00g,in	2.00g									
J6A130000-23-BLK													
01/13/2016 14:18 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 M74GK-1-AC-C			2.02g,in	2.02g	tcse3253 01/04/16,pd 09/01/96,r								
J6A130000-23-LCS													
01/13/2016 14:19 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
6 M74GK-1-AD-BN													
J6A130000-23-IBLK													
01/13/2016 10:04 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

1/14/2016 11:50:19 AM

Sample Preparation/Analysis

AN Tc-99 Prp/Sep PRP003/LSC014 Rw Yield
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:,,
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 01/19/2016

Batch: 6013023 **pCi/g**
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M74GK-BLK CommentsP-15-00386,S-14-00242

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV1AF-SAMP Constituent List:
Tc-99 RDL:15 pCi/g LCL:70 UCL:130 RPD:35
M74EV1AN-MS Constituent List:

M74GK1AA-BLK:
Tc-99 RDL:15 pCi/g LCL: UCL: RPD:
M74GK1AC-LCS:
Tc-99 RDL:15 pCi/g LCL:70 UCL:130 RPD:35
M74GK1AD-IBLK:
Tc-99 RDL:15 pCi/g LCL: UCL: RPD:

M74EV1AF-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74EV1AN-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GK1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GK1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GK1AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/18/2016 12:24:09 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/18/2015, 1/23/2016, Batch: '6013023', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6013023						
AC		Rev1C	GarciaA	1/14/2016 11:50:49		
SC			campbellsc	IsBatched	1/13/2016 10:08:10 AM	ICOC_RADCALC v4.9.0
SC			GarciaA	Prep1C	1/14/2016 11:50:49 AM	RL-PRP-003 REVISION 5
SC			NeyensA	Sep2C	1/15/2016 11:59:39 AM	RL-LSC-014 REVISION 5
SC			DawkinsO	InCnt1	1/15/2016 3:56:25 PM	RL-CI-005 REVISION 5
SC			BullJ	CalcC	1/18/2016 8:41:40 AM	RL-CI-005 REVISION 5
SC			antonsonl	Rev1C	1/18/2016 12:23:51 PM	RL-DR-001 Rev 7
AC			NeyensA	1/15/2016 11:59:39		
AC			DawkinsO	1/15/2016 3:56:25 PM		
AC			BullJ	1/18/2016 8:41:40		
AC			antonsonl	1/18/2016 12:23:51		

AC: Accepting Entry, SC: Status Change

TestAmerica Richland

Richland Wa.

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ICOCFractions v4.9.4

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1/13/2016 10:05:03 AM

Sample Preparation/Analysis

PRIORITY

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

5S C-14 Prp/Sep LSC008
TC C-14 by LSC, Carbosorb
01 STANDARD TEST SET

Balance Id:,,
Pipet #:

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6013024 OTHER pCi/g
SEQ Batch, Test: None

PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

Prep Tech:

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M74EV-1-AH J6A120420-1-SAMP 01/11/2016 15:18			5g						40m				
2 M74EV-1-AQ-X J6A120420-1-DUP 01/11/2016 15:18													
3 M74GL-1-AA-B J6A130000-24-BLK 01/13/2016 10:04 pd													
4 M74GL-1-AC-C J6A130000-24-LCS 01/13/2016 10:04 pd													
5 M74GL-1-AD-BN J6A130000-24-IBLK 01/13/2016 10:04 pd													

1 M74EV-1-AH	AmtRec: 1XLP	#Containers: 1	Scr: Alpha: Beta:
2 M74EV-1-AQ-X	AmtRec: 1XLP	#Containers: 1	Scr: Alpha: Beta:
3 M74GL-1-AA-B	AmtRec:	#Containers: 1	Scr: Alpha: Beta:
4 M74GL-1-AC-C	AmtRec:	#Containers: 1	Scr: Alpha: Beta:
5 M74GL-1-AD-BN	AmtRec:	#Containers: 1	Scr: Alpha: Beta:

1/13/2016 10:05:04 AM

Sample Preparation/Analysis

5S C-14 Prp/Sep LSC008
TC C-14 by LSC, Carbosorb
01 STANDARD TEST SET

Balance Id:,,

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

AnalyDueDate: 01/19/2016

Batch: 6013024 pCi/g
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV1AH-SAMP Constituent List:
C-14 RDL:5.00E+01 pCi/g LCL: UCL: RPD:
M74GL1AA-BLK:

M74GL1AC-LCS:

M74GL1AD-IBLK:

M74EV1AH-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GL1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GL1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M74GL1AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/18/2016 12:51:06 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/18/2015, 1/23/2016, Batch: '6013024', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6013024						
AC		**Rev1C**	**DawkinsO**	1/15/2016 3:56:41 PM		
SC			campbellsc	IsBatched	1/13/2016 10:08:13 AM	ICOC_RADCALC v4.9.0
SC			DawkinsO	InCnt1	1/15/2016 3:56:41 PM	RL-CI-005 REVISION 5
SC			BullJ	CalcC	1/17/2016 9:15:34 AM	RL-CI-005 REVISION 5
SC			antonsonl	Rev1C	1/18/2016 12:50:54 PM	RL-DR-001 Rev 7
AC			**BullJ**	1/17/2016 9:15:34		
AC			**antonsonl**	1/18/2016 12:50:54		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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ICOCFractions v4.9.4

1/19/2016 11:03:33 AM

Sample Preparation/Analysis

Balance Id:1120373922,,

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

AF Ni-63 Prp PRP003/PRP005, Sep LSC017
S4 Nickel by ICP and Nickel-63 by Liquid Scint

Pipet #: _____

AnalyDueDate: 01/19/2016

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 6013022 OTHER pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 6013019 AXTA, 6013020 6ASO, 6013021 7SSR, 6013022 AFS4, 6013023 ANS5, 6013024 5STC, 6013025 CHTH, 6013031 AGSP, 6013043 7SSR, 6018026 6ASO, 6018027 AGSP,

Prep Tech: NeyensA,GarciaA

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 **M74EV-1-AD**		120.76g	0.51g,in	0.51g	nita15952 11/03/15								
J6A120420-1-SAMP													
01/11/2016 15:18			AmtRec: 1XLP	#Containers: 1					Scr:		Alpha:		Beta:
2 **M74EV-1-AM-X**		120.76g	0.52g,in	0.52g	nita15953 11/03/15								
J6A120420-1-DUP													
01/11/2016 15:18			AmtRec: 1XLP	#Containers: 1					Scr:		Alpha:		Beta:
3 **M74GJ-1-AA-B**			0.52g,in	0.52g	nita15954 11/03/15								
J6A130000-22-BLK													
01/13/2016 14:42 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:
4 **M74GJ-1-AC-C**			0.51g,in	0.51g	nisa2419 12/30/15								
J6A130000-22-LCS													
01/13/2016 14:43 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:
5 **M74GJ-1-AD-BN**													
J6A130000-22-IBLK													
01/13/2016 10:04 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:

1/19/2016 11:03:34 AM

Sample Preparation/Analysis

AF Ni-63 Prp PRP003/PRP005, Sep LSC017
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:,,

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

AnalyDueDate: 01/19/2016

Batch: 6013022 **pCi/g**
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M74EV-SAMP CommentsP-15-00340,S-15-00223,S-15-00241,P-15-00402,S-15-00234,S-13-00195

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV1AD-SAMP Constituent List:

Ni-63	RDL:30	pCi/g	LCL:70	UCL:130	RPD:35
M74GJ1AA-BLK:					
Ni-63	RDL:30	pCi/g	LCL:	UCL:	RPD:
M74GJ1AC-LCS:					
Ni-63	RDL:30	pCi/g	LCL:70	UCL:130	RPD:35
M74GJ1AD-IBLK:					
Ni-63	RDL:30	pCi/g	LCL:	UCL:	RPD:

M74EV1AD-SAMP Calc Info:

Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
M74GJ1AA-BLK:				
Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
M74GJ1AC-LCS:				
Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
M74GJ1AD-IBLK:				
Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

1/19/2016 10:41:24 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/19/2015, 1/24/2016, Batch: '6013022', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6013022						
AC		**Rev1C**	**BullJ**	1/19/2016 10:04:55		
SC			campbellsc	IsBatched	1/13/2016 10:08:07 AM	ICOC_RADCALC v4.9.0
SC			BullJ	CalcC	1/19/2016 10:04:55 AM	RL-CI-005 REVISION 5
SC			antonsonl	Rev1C	1/19/2016 10:40:51 AM	RL-DR-001 Rev 7
AC			**antonsonl**	1/19/2016 10:40:51		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

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ICOCFractions v4.9.4

1/27/2016 12:14:26 PM

Sample Preparation/Analysis

Balance Id:1120403183,,

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

AG Pu/241 Prp PRP003/PRP005, Sep ALP002(ALP015)
SP Plutonium-241 by Liquid Scint
5I CLIENT: HANFORD [redacted]

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6018027 OTHER pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 6013019 AXTA, 6013020 6ASO, 6013021 7SSR, 6013022 AFS4, 6013023 ANS5, 6013024 5STC, 6013025 CHTH, 6013031 AGSP, 6013043 7SSR, 6018026 6ASO, 6018027 AGSP, 6020017 6ASO, 6022017 6ASO

Prep Tech: JorgensonD

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M74EV-2-AT J6A120420-1-SAMP 01/11/2016 15:18		120.76g	1.00g,in 1.00g,fi AmtRec: 1XLP	0.0083g 120.76g,di	PUTC14399 11/06/15,pd 01/01/10,r #Containers: 1				Scr:		Alpha:		Beta:
2 M74EV-2-AU-X J6A120420-1-DUP 01/11/2016 15:18		120.76g	1.00g,in 1.00g,fi AmtRec: 1XLP	0.0083g 120.76g,di	PUTC14402 11/06/15,pd 01/01/10,r #Containers: 1				Scr:		Alpha:		Beta:
3 M74G9-2-AA-B J6A130000-31-BLK 01/18/2016 10:04 pd			1.20g,in AmtRec:	1.20g	PUTC14409 11/06/15,pd 01/01/10,r #Containers: 1				Scr:		Alpha:		Beta:
4 M74G9-2-AC-C J6A130000-31-LCS 01/18/2016 10:04 pd			1.00g,in AmtRec:	1.00g	241B0110 01/13/16,pd 06/01/01,r #Containers: 1				Scr:		Alpha:		Beta:
5 M74G9-2-AD-BN J6A130000-31-IBLK 01/18/2016 10:04 pd			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

1/27/2016 12:14:28 PM

Sample Preparation/Analysis

AG Pu/241 Prp PRP003/PRP005, Sep ALP002(ALP015)
SP Plutonium-241 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:,,

Pipet #: _____

AnalyDueDate: 01/19/2016

Sep1 DT/Tm Tech:

Batch: 6018027 pCi/g
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech:

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M74EV-SAMP CommentsP-15-00340,S-15-00223,S-15-00241,P-15-00402,S-15-00234,S-13-00195

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M74EV2AT-SAMP Constituent List:

Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35

M74G92AA-BLK:

Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35

M74G92AC-LCS:

PU-239	RDL:	pCi/g	LCL:70	UCL:130	RPD:35	Pu-241	RDL:15	pCi/g	LCL:70	UCL:130	RPD:35
Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35						

M74G92AD-IBLK:

Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35

M74EV2AT-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

M74G92AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

M74G92AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

M74G92AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/28/2016 8:10:56 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/28/2015, 2/2/2016, Batch: '6018027', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6018027						
AC		**Rev1C**	**BullJ**	1/28/2016 7:47:39		
SC			wattn	IsBatched	1/18/2016 10:36:09 AM	ICOC_RADCALC v4.9.0
SC			BullJ	CalcC	1/28/2016 7:47:39 AM	RL-CI-005 REVISION 5
SC			Mcginnist	Rev1C	1/28/2016 8:10:35 AM	RL-DR-001 Rev 7
AC			**Mcginnist**	1/28/2016 8:10:35		

AC: Accepting Entry; SC: Status Change

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ICOCFractions v4.9.4