

RECEIVED AUGUST 27, 2008



**EBERLINE**  
SERVICES

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August 27, 2008

Mr. Steve Trent  
Fluor Hanford Inc.  
1200 Jadwin Avenue  
Richland, WA 99352

Reference: **P.O. #33677**  
**Eberline Services R8-07-096-7143, SDG H3794**

Dear Mr. Trent:

Enclosed is a data report for one solid (soil) sample designated under SAF No. F07-056 received at Eberline Services on July 17, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion  
Senior Program Manager

MCM/njv

Enclosure: Data Package

## 1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H3794 was composed of one solid (soil) sample designated under SAF No. F07-056 with a Project Designation of: 216-A-2 and 216-A-21 Geochemical Modeling Parameters.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

## 2.0 ANALYSIS NOTES

### 2.1 Tritium Analysis

No problems were encountered during the course of the analyses.

### 2.2 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

### 2.3 Nickel-63 Analysis

No problems were encountered during the course of the analyses.

### 2.4 Strontium-90 Analysis

No problems were encountered during the course of the analyses.

### 2.5 Iodine-129 Analysis

No problems were encountered during the course of the analyses.

### 2.6 Neptunium-237 Analysis

No problems were encountered during the course of the analyses.

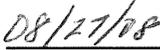
### 2.7 Americium-241 Analysis

No problems were encountered during the course of the analyses.

## 3.0 Case Narrative Certification Statement

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

  
\_\_\_\_\_  
Melissa C. Mannion  
Senior Program Manager

  
\_\_\_\_\_  
Date

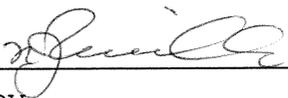
E B E R L I N E   S E R V I C E S / R I C H M O N D  
S A M P L E   D E L I V E R Y   G R O U P   H 3 7 9 4

SDG <u>7143</u> Contact <u>Melissa C. Mannion</u>
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Client <u>Hanford</u> Contract <u>No. 33677</u> Case no <u>SDG_H3794</u>
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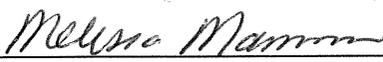
S U M M A R Y   D A T A   S E C T I O N

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Prepared by



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Reviewed by

Lab id	<u>EBRLNE</u>
Protocol	<u>Fluor</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-TOC</u>
Version	<u>3.06</u>
Report date	<u>08/27/08</u>

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H3794

SDG 7143

Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford

Contract No. 33677

Case no SDG H3794

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Fluor

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 08/27/08

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H3794

SDG 7143

Contact Melissa C. Mannion

GUIDE , c o n t .

Client Hanford

Contract No. 33677

Case no SDG H3794

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol Fluor

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 08/27/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3794

SDG 7143  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 33677  
Case no SDG H3794

LAB SAMPLE SUMMARY

LAB	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R807096-01	B1P3M0	A-21	SOLID		F08-056	F07-056-299	07/01/08 10:20
R807096-02	Lab Control Sample		SOLID		F08-056		
R807096-03	Method Blank		SOLID		F08-056		
R807096-04	Duplicate (R807096-01)	A-21	SOLID		F08-056		07/01/08 10:20

LAB SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Fluor  
Version Ver 1.0  
Form DVD-LS  
Version 3.06  
Report date 08/27/08

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

SDG <u>7143</u>
Contact <u>Melissa C. Mannion</u>

Client <u>Hanford</u>
Contract No. <u>33677</u>
Case no <u>SDG H3794</u>

**QC SUMMARY**

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7143	F07-056-299	B1P3M0	SOLID	92.8	17 g		07/17/08 16	R807096-01		7143-001
		Method Blank	SOLID					R807096-03		7143-003
		Lab Control Sample	SOLID					R807096-02		7143-002
		Duplicate (R807096-01)	SOLID	92.8	17 g		07/17/08 16	R807096-04		7143-004

QC SUMMARY

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Lab id <u>EBRLNE</u>
Protocol <u>Fluor</u>
Version <u>Ver 1.0</u>
Form <u>DVD-QS</u>
Version <u>3.06</u>
Report date <u>08/27/08</u>

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

SDG 7143  
 Contact Melissa C. Mannion

**PREP BATCH SUMMARY**

Client Hanford  
 Contract No. 33677  
 Case no SDG H3794

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI-	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK		LCS
<b>Alpha Spectroscopy</b>										
AM	SOLID	Americium 241 in Solids	6165-006	8.0	1			1	1	1/1
NP	SOLID	Neptunium in Solids	6165-006	14.8	1			1	1	1/1
<b>Beta Counting</b>										
SR	SOLID	Total Strontium in Solids	6165-006	10.4	1			1	1	1/1
<b>Gamma Spectroscopy</b>										
I	SOLID	Iodine 129 in Solids	6165-006	19.4	1			1	1	1/1
<b>Liquid Scintillation Counting</b>										
C	SOLID	Carbon 14 in Solids	6165-006	10.0	1			1	1	1/1
H	SOLID	Tritium in Solids	6165-006	10.0	1			1	1	1/1
NI_L	SOLID	Nickel 63 in Solids	6165-006	11.2	1			1	1	1/1

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.  
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EBRLNE  
 Protocol Fluor  
 Version Ver 1.0  
 Form DVD-PBS  
 Version 3.06  
 Report date 08/27/08

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

SDG 7143  
 Contact Melissa C. Mannion

Client Hanford  
 Contract No. 33677  
 Case no SDG H3794

**LAB WORK SUMMARY**

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION		MATRIX		FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAF No		PLANCHET	TEST					
R807096-01	B1P3M0			7143-001	AM	08/15/08	08/27/08	BW	Americium 241 in Solids	
07/01/08	A-21		SOLID	7143-001	C	08/13/08	08/19/08	BW	Carbon 14 in Solids	
07/17/08	F07-056-299	F08-056		7143-001	H	08/14/08	08/19/08	BW	Tritium in Solids	
				7143-001	I	08/21/08	08/25/08	BW	Iodine 129 in Solids	
				7143-001	NI_L	08/13/08	08/27/08	BW	Nickel 63 in Solids	
				7143-001	NP	08/14/08	08/27/08	BW	Neptunium in Solids	
				7143-001	SR	08/09/08	08/27/08	BW	Total Strontium in Solids	
R807096-02	Lab Control Sample			7143-002	AM	08/15/08	08/27/08	BW	Americium 241 in Solids	
			SOLID	7143-002	C	08/13/08	08/19/08	BW	Carbon 14 in Solids	
		F08-056		7143-002	H	08/14/08	08/19/08	BW	Tritium in Solids	
				7143-002	I	08/21/08	08/25/08	BW	Iodine 129 in Solids	
				7143-002	NI_L	08/13/08	08/27/08	BW	Nickel 63 in Solids	
				7143-002	NP	08/15/08	08/27/08	BW	Neptunium in Solids	
				7143-002	SR	08/09/08	08/27/08	BW	Total Strontium in Solids	
R807096-03	Method Blank			7143-003	AM	08/15/08	08/27/08	BW	Americium 241 in Solids	
			SOLID	7143-003	C	08/13/08	08/19/08	BW	Carbon 14 in Solids	
		F08-056		7143-003	H	08/14/08	08/19/08	BW	Tritium in Solids	
				7143-003	I	08/22/08	08/25/08	BW	Iodine 129 in Solids	
				7143-003	NI_L	08/13/08	08/27/08	BW	Nickel 63 in Solids	
				7143-003	NP	08/15/08	08/27/08	BW	Neptunium in Solids	
				7143-003	SR	08/09/08	08/27/08	BW	Total Strontium in Solids	
R807096-04	Duplicate (R807096-01)			7143-004	AM	08/15/08	08/27/08	BW	Americium 241 in Solids	
07/01/08	A-21		SOLID	7143-004	C	08/13/08	08/19/08	BW	Carbon 14 in Solids	
07/17/08		F08-056		7143-004	H	08/14/08	08/19/08	BW	Tritium in Solids	
				7143-004	I	08/22/08	08/25/08	BW	Iodine 129 in Solids	
				7143-004	NI_L	08/13/08	08/27/08	BW	Nickel 63 in Solids	
				7143-004	NP	08/15/08	08/27/08	BW	Neptunium in Solids	
				7143-004	SR	08/09/08	08/27/08	BW	Total Strontium in Solids	

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE  
 Protocol Fluor  
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 Form DVD-LWS  
 Version 3.06  
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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

SDG 7143  
 Contact Melissa C. Mannion

**WORK SUMMARY, cont.**

Client Hanford  
 Contract No. 33677  
 Case no SDG H3794

**COUNTS OF TESTS BY SAMPLE TYPE**

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
AM	F08-056	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	1			1	1	1	4
C	F08-056	Carbon 14 in Solids	C14_COX_LSC	1			1	1	1	4
H	F08-056	Tritium in Solids	TRITIUM_COX_LSC	1			1	1	1	4
I	F08-056	Iodine 129 in Solids	I129_SEP_LEPS_GS	1			1	1	1	4
NI_L	F08-056	Nickel 63 in Solids	NI63_LSC	1			1	1	1	4
NP	F08-056	Neptunium in Solids	NP237_LLE_PLATE_AEA	1			1	1	1	4
SR	F08-056	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
<b>TOTALS</b>				<b>7</b>			<b>7</b>	<b>7</b>	<b>7</b>	<b>28</b>

WORK SUMMARY

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Lab id EBRLNE  
 Protocol Fluor  
 Version Ver 1.0  
 Form DVD-LWS  
 Version 3.06  
 Report date 08/27/08

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H3794

7143-003

Method Blank

METHOD BLANK

SDG <u>7143</u>	Client/Case no <u>Hanford</u>	SDG <u>H3794</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>33677</u>	
Lab sample id <u>R807096-03</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7143-003</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F08-056</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	-31.2	46	82.6	400	U	H
Carbon 14	14762-75-5	9.35	35	<u>59.6</u>	50.0	U	C
Nickel 63	13981-37-8	-9.78	45	<u>78.0</u>	30.0	U	NI_L
Total Strontium	SR-RAD	9.91	18	<u>34.0</u>	1.00	U	SR
Iodine 129	15046-84-1	-9.22	12	<u>27.3</u>	2.00	U	I
Neptunium 237	13994-20-2	0	1.3	<u>4.91</u>	1.00	U	NP
Americium 241	14596-10-2	2.54	4.1	<u>6.82</u>	1.00	U	AM

216A2 & 216A21 GeochemModelingParams

QC-BLANK #66519
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Lab id <u>EBRLNE</u>
Protocol <u>Fluor</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>08/27/08</u>



**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

7143-004

B1P3M0

**DUPLICATE**

SDG <u>7143</u>		Client/Case no <u>Hanford</u> <u>SDG H3794</u>
Contact <u>Melissa C. Mannion</u>		Contract <u>No. 33677</u>
DUPLICATE	ORIGINAL	
Lab sample id <u>R807096-04</u>	Lab sample id <u>R807096-01</u>	Client sample id <u>B1P3M0</u>
Dept sample id <u>7143-004</u>	Dept sample id <u>7143-001</u>	Location/Matrix <u>A-21</u> <u>SOLID</u>
	Received <u>07/17/08</u>	Collected/Weight <u>07/01/08 10:20</u> <u>17 g</u>
% solids <u>92.8</u>	% solids <u>92.8</u>	Custody/SAF No <u>F07-056-299</u> <u>F08-056</u>

ANALYTE	DUPLICATE	2σ ERR	MDA	RDL	QUALI-	ORIGINAL	2σ ERR	MDA	QUALI-	RPD	3σ	DER
	pCi/g	(COUNT)	pCi/g	pCi/g	FIERS TEST		pCi/g	(COUNT)	pCi/g	FIERS	%	TOT
Tritium	67.1	47	75.3	400	U H	93.3	48	75.4		33	128	0.8
Carbon 14	288	42	<u>55.6</u>	50.0	C	235	40	<u>55.3</u>		20	40	1.5
Nickel 63	-2.59	44	<u>75.8</u>	30.0	U NI_L	23.3	45	<u>75.7</u>	U	-		0.8
Total Strontium	14000	260	<u>43.1</u>	1.00	SR	13700	290	<u>51.0</u>		2	22	0.3
Iodine 129	-5.38	9.8	<u>22.4</u>	2.00	U I	-3.55	6.0	<u>13.5</u>	U	-		0.3
Neptunium 237	0.573	2.3	<u>4.39</u>	1.00	U NP	0.138	0.55	<u>1.06</u>	U	-		0.4
Americium 241	2.22	4.4	<u>8.17</u>	1.00	U AM	1.76	5.3	<u>10.8</u>	U	-		0.1

216A2 & 216A21 GeochemModelingParams

QC-DUP#1 66520

DUPLICATES

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Protocol <u>Fluor</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
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Report date <u>08/27/08</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H3794

7143-001

B1P3M0

DATA SHEET

SDG <u>7143</u>	Client/Case no <u>Hanford</u>	SDG <u>H3794</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>33677</u>	
Lab sample id <u>R807096-01</u>	Client sample id <u>B1P3M0</u>	
Dept sample id <u>7143-001</u>	Location/Matrix <u>A-21</u>	<u>SOLID</u>
Received <u>07/17/08</u>	Collected/Weight <u>07/01/08 10:20</u>	<u>17 g</u>
% solids <u>92.8</u>	Custody/SAF No <u>F07-056-299</u>	<u>F08-056</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	93.3	48	75.4	400		H
Carbon 14	14762-75-5	235	40	<u>55.3</u>	50.0		C
Nickel 63	13981-37-8	23.3	45	<u>75.7</u>	30.0	U	NI_L
Total Strontium	SR-RAD	13700	290	<u>51.0</u>	1.00		SR
Iodine 129	15046-84-1	-3.55	6.0	<u>13.5</u>	2.00	U	I
Neptunium 237	13994-20-2	0.138	0.55	<u>1.06</u>	1.00	U	NP
Americium 241	14596-10-2	1.76	5.3	<u>10.8</u>	1.00	U	AM

216A2 & 216A21 GeochemModelingParams

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Lab id <u>EBRLNE</u>
Protocol <u>Fluor</u>
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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

Test AM Matrix SOLID  
 SDG 7143  
 Contact Melissa C. Mannion

**LAB METHOD SUMMARY**

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford  
 Contract No. 33677  
 Contract SDG H3794

**RESULTS**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>		<b>Americium</b>
<b>SAMPLE ID</b>	<b>TEST FIX</b>	<b>PLANCHET</b>	<b>CLIENT SAMPLE ID</b>	<b>241</b>

Preparation batch 6165-006

R807096-01	7143-001	B1P3M0	1.76	U
R807096-02	7143-002	Lab Control Sample	ok	
R807096-03	7143-003	Method Blank	<u>2.54</u>	U
R807096-04	7143-004	Duplicate (R807096-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00  
 216A2 & 216A21 GeochemModelingParams

**METHOD PERFORMANCE**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>	<b>MDA</b>	<b>ALIQ</b>	<b>PREP</b>	<b>DILU-</b>	<b>YIELD</b>	<b>EFF</b>	<b>COUNT</b>	<b>FWHM</b>	<b>DRIFT</b>	<b>DAYS</b>	<b>ANAL-</b>		
<b>SAMPLE ID</b>	<b>TEST FIX</b>	<b>CLIENT SAMPLE ID</b>	<b>pCi/g</b>	<b>g</b>	<b>FAC</b>	<b>TION</b>	<b>%</b>	<b>%</b>	<b>min</b>	<b>keV</b>	<b>KeV</b>	<b>HELD</b>	<b>PREPARED</b>	<b>YZED</b>	<b>DETECTOR</b>

Preparation batch 6165-006 2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 6

R807096-01	B1P3M0	<u>10.8</u>	0.0200	42	197	45	08/14/08	08/15	SS-034
R807096-02	Lab Control Sample	<u>10.4</u>	0.0200	47	196	08/14/08	08/15	SS-035	
R807096-03	Method Blank	<u>6.82</u>	0.0200	57	196	08/14/08	08/15	SS-036	
R807096-04	Duplicate (R807096-01)	<u>8.17</u>	0.0200	41	196	45	08/14/08	08/15	SS-037

Nominal values and limits from method 1.00 0.0200 20-105 100 100 180

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-061	Determination of Moisture Content in Solid Samples rev 0
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD	MDA <u>9.05</u> ± <u>3.77</u>
FOR 4 SAMPLES	YIELD <u>47</u> ± <u>15</u>

METHOD SUMMARIES

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

Test NP Matrix SOLID  
 SDG 7143  
 Contact Melissa C. Mannion

Client Hanford  
 Contract No. 33677  
 Contract SDG H3794

**LAB METHOD SUMMARY**

NEPTUNIUM IN SOLIDS  
 ALPHA SPECTROSCOPY

**RESULTS**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>		Neptunium
<b>SAMPLE ID</b>	<b>TEST FIX</b>	<b>PLANCHET</b>	<b>CLIENT SAMPLE ID</b>	<b>237</b>

Preparation batch 6165-006

R807096-01	7143-001	B1P3M0		U
R807096-02	7143-002	Lab Control Sample		ok
R807096-03	7143-003	Method Blank		U
R807096-04	7143-004	Duplicate (R807096-01)		- U

Nominal values and limits from method      RDLs (pCi/g)      1.00  
 216A2 & 216A21 GeochemModelingParams

**METHOD PERFORMANCE**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>		<b>MDA</b>	<b>ALIQ</b>	<b>PREP</b>	<b>DILU-</b>	<b>YIELD</b>	<b>EFF</b>	<b>COUNT</b>	<b>FWHM</b>	<b>DRIFT</b>	<b>DAYS</b>		<b>ANAL-</b>	
<b>SAMPLE ID</b>	<b>TEST FIX</b>	<b>CLIENT SAMPLE ID</b>		<b>pCi/g</b>	<b>g</b>	<b>FAC</b>	<b>TION</b>	<b>%</b>	<b>%</b>	<b>min</b>	<b>keV</b>	<b>KeV</b>	<b>HELD</b>	<b>PREPARED</b>	<b>YZED</b>	<b>DETECTOR</b>

Preparation batch 6165-006      2σ prep error 14.8 %      Reference Lab Notebook #6160, pg. 6

R807096-01	B1P3M0	<u>1.06</u>	0.0200					57		736		44	08/14/08	08/14	SS-053
R807096-02	Lab Control Sample	<u>1.47</u>	0.0200					59		925			08/14/08	08/15	SS-034
R807096-03	Method Blank	<u>4.91</u>	0.0200					53		197			08/14/08	08/15	SS-032
R807096-04	Duplicate (R807096-01)	<u>4.39</u>	0.0200					52		197		45	08/14/08	08/15	SS-033

Nominal values and limits from method      1.00      0.0200      20-105      100      180

<b>PROCEDURES</b>	<b>REFERENCE</b>	NP237_LLE_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-930	Neptunium from Solids and Water by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

<b>AVERAGES ± 2 SD</b>	<b>MDA</b>	<u>2.96</u> ± <u>3.95</u>
<b>FOR 4 SAMPLES</b>	<b>YIELD</b>	<u>55</u> ± <u>7</u>

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SAMPLE DELIVERY GROUP H3794

Test SR Matrix SOLID  
 SDG 7143  
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Client Hanford  
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 Contract SDG H3794

**LAB METHOD SUMMARY**

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

**RESULTS**

LAB	RAW	SUF-		Total
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium
Preparation batch 6165-006				
R807096-01		7143-001	B1P3M0	13700
R807096-02		7143-002	Lab Control Sample	ok
R807096-03		7143-003	Method Blank	<u>9.91</u> U
R807096-04		7143-004	Duplicate (R807096-01)	ok

Nominal values and limits from method RDLs (pCi/g) 1.00  
 216A2 & 216A21 GeochemModelingParams

**METHOD PERFORMANCE**

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 6165-006 2σ prep error 10.4 % Reference Lab Notebook #6160, pg. 6															
R807096-01		B1P3M0	<u>51.0</u>	0.0100			71	100				39	08/09/08	08/09	GRB-225
R807096-02		Lab Control Sample	<u>31.5</u>	0.0100			76	100					08/09/08	08/09	GRB-221
R807096-03		Method Blank	<u>34.0</u>	0.0100			85	100					08/09/08	08/09	GRB-207
R807096-04		Duplicate (R807096-01)	<u>43.1</u>	0.0100			79	120				39	08/09/08	08/09	GRB-229

Nominal values and limits from method 1.00 0.0100 30-105 100 180

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7	
SPP-062	Sample Aliquoting, rev 0	
CP-380	Strontium in Water Samples, rev 2	

AVERAGES ± 2 SD	MDA <u>39.9</u> ± <u>17.8</u>
FOR 4 SAMPLES	YIELD <u>78</u> ± <u>12</u>

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

Test H Matrix SOLID  
 SDG 7143  
 Contact Melissa C. Mannion

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**LAB METHOD SUMMARY**

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID		Tritium
Preparation batch 6165-006					
R807096-01		7143-001	B1P3M0		93.3
R807096-02		7143-002	Lab Control Sample		ok
R807096-03		7143-003	Method Blank		U
R807096-04		7143-004	Duplicate (R807096-01)		ok U

Nominal values and limits from method RDLs (pCi/g) 400  
 216A2 & 216A21 GeochemModelingParams

**METHOD PERFORMANCE**

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 6165-006 2σ prep error 10.0 % Reference Lab Notebook #6160, pg. 6															
R807096-01		B1P3M0	75.4	0.0220			100		50			44	08/13/08	08/14	LSC-007
R807096-02		Lab Control Sample	83.0	0.0200			100		50				08/13/08	08/14	LSC-007
R807096-03		Method Blank	82.6	0.0200			100		50				08/13/08	08/14	LSC-007
R807096-04		Duplicate (R807096-01)	75.3	0.0220			100		50			44	08/13/08	08/14	LSC-007

Nominal values and limits from method 400 0.0200 25 180

PROCEDURES REFERENCE TRITIUM\_COX\_LSC  
 CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD MDA 79.1 ± 8.61  
 FOR 4 SAMPLES YIELD 100 ± 0

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H3794

Test NI L Matrix SOLID  
 SDG 7143  
 Contact Melissa C. Mannion

**LAB METHOD SUMMARY**

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford  
 Contract No. 33677  
 Contract SDG H3794

**RESULTS**

LAB RAW SUF-  
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Nickel 63

Preparation batch 6165-006

R807096-01	7143-001	B1P3M0	U
R807096-02	7143-002	Lab Control Sample	ok
R807096-03	7143-003	Method Blank	U
R807096-04	7143-004	Duplicate (R807096-01)	- U

Nominal values and limits from method RDLs (pCi/g) 30.0  
 216A2 & 216A21 GeochemModelingParams

**METHOD PERFORMANCE**

LAB	RAW SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 6165-006 2σ prep error 11.2 % Reference Lab Notebook #6160, pg. 6

R807096-01	B1P3M0	<u>75.7</u>	0.0200				98		50		43	08/13/08	08/13	LSC-004
R807096-02	Lab Control Sample	<u>76.9</u>	0.0200				95		50			08/13/08	08/13	LSC-004
R807096-03	Method Blank	<u>78.0</u>	0.0200				95		50			08/13/08	08/13	LSC-004
R807096-04	Duplicate (R807096-01)	<u>75.8</u>	0.0200				99		50		43	08/13/08	08/13	LSC-004

Nominal values and limits from method 30.0 0.0200 30-105 25 180

PROCEDURES	REFERENCE	NI63_LSC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD	MDA	<u>76.6</u>	±	<u>2.16</u>
FOR 4 SAMPLES	YIELD	<u>97</u>	±	<u>4</u>

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SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- \* LAB SAMPLE ID is the lab's primary identification for a sample.
- \* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- \* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- \* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- \* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- \* The preparation batches are shown in the same order as the Method Summary Reports are printed.
- \* Only analyses of planchets relevant to the SDG are included.
- \* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- \* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

X Some data has been manually entered or modified.  
Transcription errors are possible.

P One or more results are 'preliminary'. The data is not ready for final reporting.

2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- \* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- \* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- \* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- \* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- \* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- \* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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**R E P O R T   G U I D E**

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**D A T A   S H E E T**

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- \* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- \* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- \* ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- \* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- \* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity).

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DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- \* An MDA is underlined if it is bigger than its RDL.

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D A T A   S H E E T

- \* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- \* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- \* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- \* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  1. The error of RESULT, including that introduced by rounding the result prior to printing.  
  
If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
  2. The error of ADDED.
  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- \* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- \* The second limit for the RPD is the larger of:
  1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- \* The RPD is underlined if it is greater than either limit.
- \* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- \* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- \* The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.
3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- \* The second limits are protocol defined upper and lower QC limits

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MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

\* The recovery is underlined (out of spec) if it is outside either of these ranges.

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METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- \* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- \* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- \* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- \* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- \* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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Protocol Fluor  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 08/27/08

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H3794

SDG 7143  
 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
 Contract No. 33677  
 Case no SDG H3794

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- \* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- \* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- \* Aliquots are underlined if less than the nominal value specified for the method.
- \* Preparation factors are underlined if greater than the nominal value specified for the method.
- \* Dilution factors are underlined if greater than the nominal value specified for the method.
- \* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- \* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- \* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

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Contact Melissa C. Mannion

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Case no SDG H3794

METHOD SUMMARY

- \* Count times are underlined if less than the nominal value specified for the method.
- \* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- \* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- \* Days Held are underlined if greater than the holding time specified in the protocol.
- \* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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SDG 7143  
Contact Melissa C. Mannion

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results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Lab id EBRLNE  
Protocol Fluor  
Version Ver 1.0  
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COLLECTOR: FLUOR HANFORD NCO  
 COMPANY CONTACT: TRENT, SJ  
 TELEPHONE NO.: 373-5689  
 PROJECT COORDINATOR: TRENT, SJ  
 PRICE CODE: 8H  
 DATA TURNAROUND: 30 Days / 30 Days

SAMPLING LOCATION: A-21  
 PROJECT DESIGNATION: 216-A-2 and 216-A-21 Geochemical Modeling Parameters  
 SAF NO.: F07-056  
 AIR QUALITY:   
 METHOD OF SHIPMENT: FEDERAL EXPRESS

ICE CHEST NO.: GRP-08-00  
 FIELD LOGBOOK NO.:  
 ACTUAL SAMPLE DEPTH:  
 BILL OF LADING/AIR BILL NO.:

SHIPPED TO: Eberline Services  
 OFFSITE PROPERTY NO.: 140042000  
 COA: 122868ES10

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS	SAMPLE DATE	SAMPLE TIME
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	None	P	1	20mlp Acc 7-1-08	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	7-1-8	1020

SAMPLE NO.	MATRIX*	SPECIAL HANDLING AND/OR STORAGE
B1P3M0	SOIL	

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	7-1-8 1245	M0745 Ref 1	7-1-8 1245					
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	7-1-8 0600	Dannoy CS	7-16-8 0600					
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	7-1-8 1400	FELER	7-16-8 1400					
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN		FELER	7-17-08 09:00					
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN								
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN								
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN								
LABORATORY SECTION	RECEIVED BY								
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD								

**SPECIAL INSTRUCTIONS**  
 NOTE: ORIGINAL COC ATTACHED TO DOCUMENT CHAIN OF POSSESSION.  
 Rad tie to B1P3K4.  
 (1) Carbon-14; Iodine-129; Strontium-89,90 -- Total Sr; Tritium - H3;  
 Americium-241; Neptunium-237;

*AK*  
*7/17/08*

Client: F. HANFORD City MCCLEND State WA

Date/Time received 07/17/08 09:00 CoC No. F07-056-299

Container I.D. No. GRP-08-02 Requested TAT (Days) 30 P.O. Received Yes [ ] No [  ]

**INSPECTION**

1. Custody seals on shipping container intact? Yes [  ] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [  ] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [  ] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [  ] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [ ]
6. Number of samples in shipping container: 1 Sample Matrix S
7. Number of containers per sample: 1 (Or see CoC         )
8. Samples are in correct container Yes [  ] No [ ]
9. Paperwork agrees with samples? Yes [  ] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [  ]
11. Samples are: In good condition [  ] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH          Preservative
13. Describe any anomalies:  
\_\_\_\_\_  
\_\_\_\_\_

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date         

15. Inspected by Mey Date: 07/17/08 Time: 10:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>BIP3MO</u>	<u>22,000</u>						

Ion Chamber Ser. No.           
Alpha Meter Ser. No.           
Beta/Gamma Meter Ser. No. 99574

Calibration date           
Calibration date           
Calibration date 08 MAY 09