

**SAF-B00-029**  
**100 F Area - Quick Turn**  
**FINAL DATA PACKAGE**

**FAX RESULTS TO:**

Mike Stankovich

N/A  
 \_\_\_\_\_  
 INITIAL/DATE

**VERIFICATION OF CLIENT RECEIPT:**

Phone or CC:Mail to Mike Stankovich

N/A  
 \_\_\_\_\_  
 INITIAL/DATE

**COMPLETE COPY OF DATA PACKAGE TO:**

Mike Stankovich      H9-02

*B & S/S/03*  
 \_\_\_\_\_  
 INITIAL/DATE

**COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)**

SDG

(H2167)

SAF-B00-029

 Rad only

Chem only

Rad &amp; Chem

 Complete

Partial

**Waste Site: 100-F-23/100-F-24/100-F-25**

**RECEIVED**  
 MAY 30 2003  
**EDMC**



**EBERLINE**  
SERVICES

April 30, 2003

Ms. Joan Kessner  
Bechtel Hanford Inc.  
3350 George Washington Way  
Richland, WA 99352  
MSIN: H0-025



Reference: **P.O. #630**  
**Eberline Services R3-04-117-7768, SDG H2167**  
**R3-04-118-7769**  
**R3-04-119-7770**

Dear Ms. Kessner:

Enclosed is the data report for seventy-two solid samples designated under SAF No. B00-029 received at Eberline Services on April 18, 2003. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion  
Program Manager

MCM

Enclosure: Data Package

Analytical Services  
2030 Wright Avenue  
P.O. Box 4040  
Richmond, California 94804-0040  
(510) 235-2633 Fax (510) 235-0438  
Toll Free (800) 841-5487  
[www.eberlineservices.com](http://www.eberlineservices.com)

**1.0 GENERAL**

Bechtel Hanford Inc. (BHI) Sample Delivery Group H2167 was composed of seventy-two solid (soil) samples designated under SAF No. B00-029 with a Project Designation of: 100 F Area – Quick Turn.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-fax on April 23 and 24, 2003. The electronic data deliverables (EDD) were transmitted to BHI via e-mail on April 23 and 24, 2003.

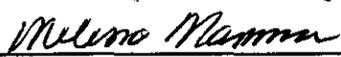
**2.0 ANALYSIS NOTES**

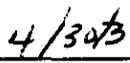
**2.1 Gamma Screen Analyses**

No problems were encountered during the course of the analyses.

**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**  
**Program Manager**

  
\_\_\_\_\_  
**Date**

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

SDG 7768  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG\_H2167

S U M M A R Y   D A T A   S E C T I O N

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Melissa Mannion  
Prepared by

Melissa Mannion  
Reviewed by

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 04/23/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7768  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2167

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  
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Report date 04/23/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7768  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG H2167

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  
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2167

SAMPLE SUMMARY

SDG 7768  
 Contact Melissa C. Mannion

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J00LD2	100-F-23	SOLID		R304117-01	B00-029	B00-029-271	04/16/03 08:27
J00LD3	100-F-23	SOLID		R304117-02	B00-029	B00-029-271	04/16/03 08:29
J00LD4	100-F-23	SOLID		R304117-03	B00-029	B00-029-271	04/16/03 08:30
J00LD5	100-F-23	SOLID		R304117-04	B00-029	B00-029-271	04/16/03 08:25
J00LD6	100-F-23	SOLID		R304117-05	B00-029	B00-029-271	04/16/03 08:31
J00LD7	100-F-23	SOLID		R304117-06	B00-029	B00-029-271	04/16/03 08:37
J00LD8	100-F-23	SOLID		R304117-07	B00-029	B00-029-271	04/16/03 08:32
J00LD9	100-F-23	SOLID		R304117-08	B00-029	B00-029-271	04/16/03 08:43
J00LF0	100-F-23	SOLID		R304117-09	B00-029	B00-029-271	04/16/03 08:39
J00LF1	100-F-23	SOLID		R304117-10	B00-029	B00-029-271	04/16/03 08:35
J00LF2	100-F-23	SOLID		R304117-11	B00-029	B00-029-271	04/16/03 08:45
J00LF3	100-F-23	SOLID		R304117-12	B00-029	B00-029-271	04/16/03 08:41
J00LF4	100-F-23	SOLID		R304117-13	B00-029	B00-029-271	04/16/03 08:36
J00LF5	100-F-23	SOLID		R304117-14	B00-029	B00-029-271	04/16/03 08:37
J00LF6	100-F-23	SOLID		R304117-15	B00-029	B00-029-271	04/16/03 08:49
J00LF7	100-F-23	SOLID		R304117-16	B00-029	B00-029-271	04/16/03 08:47
J00LF8	100-F-23	SOLID		R304117-17	B00-029	B00-029-271	04/16/03 08:44
J00LF9	100-F-23	SOLID		R304117-18	B00-029	B00-029-271	04/16/03 08:38
J00LH0	100-F-23	SOLID		R304117-19	B00-029	B00-029-271	04/16/03 08:38
J00LH1	100-F-23	SOLID		R304117-20	B00-029	B00-029-271	04/16/03 08:39
J00LH2	100-F-23	SOLID		R304117-21	B00-029	B00-029-271	04/16/03 08:42
J00LH3	100-F-23	SOLID		R304117-22	B00-029	B00-029-271	04/16/03 08:46
J00LH4	100-F-23	SOLID		R304117-23	B00-029	B00-029-271	04/16/03 08:40
J00LH5	100-F-23	SOLID		R304117-24	B00-029	B00-029-271	04/16/03 08:41
Method Blank		SOLID		R304117-25	B00-029		

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 Version 3.06  
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**EBERLINE SERVICES/RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

SDG 7768  
 Contact Melissa C. Mannion

**QC SUMMARY**

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

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
7768	B00-029-271	J00LD2	SOLID	100.0	779.8 g		04/18/03	2	R304117-01	7768-001
		J00LD3	SOLID	100.0	742.3 g		04/18/03	2	R304117-02	7768-002
		J00LD4	SOLID	100.0	730.0 g		04/18/03	2	R304117-03	7768-003
		J00LD5	SOLID	100.0	757.9 g		04/18/03	2	R304117-04	7768-004
		J00LD6	SOLID	100.0	733.3 g		04/18/03	2	R304117-05	7768-005
		J00LD7	SOLID	100.0	609.5 g		04/18/03	2	R304117-06	7768-006
		J00LD8	SOLID	100.0	712.7 g		04/18/03	2	R304117-07	7768-007
		J00LD9	SOLID	100.0	664.1 g		04/18/03	2	R304117-08	7768-008
		J00LF0	SOLID	100.0	767.2 g		04/18/03	2	R304117-09	7768-009
		J00LF1	SOLID	100.0	709.7 g		04/18/03	2	R304117-10	7768-010
		J00LF2	SOLID	100.0	650.7 g		04/18/03	2	R304117-11	7768-011
		J00LF3	SOLID	100.0	654.3 g		04/18/03	2	R304117-12	7768-012
		J00LF4	SOLID	100.0	751.4 g		04/18/03	2	R304117-13	7768-013
		J00LF5	SOLID	100.0	773.0 g		04/18/03	2	R304117-14	7768-014
		J00LF6	SOLID	100.0	664.1 g		04/18/03	2	R304117-15	7768-015
		J00LF7	SOLID	100.0	732.8 g		04/18/03	2	R304117-16	7768-016
		J00LF8	SOLID	100.0	740.9 g		04/18/03	2	R304117-17	7768-017
J00LF9	SOLID	100.0	696.2 g		04/18/03	2	R304117-18	7768-018		
J00LH0	SOLID	100.0	715.5 g		04/18/03	2	R304117-19	7768-019		
J00LH1	SOLID	100.0	665.3 g		04/18/03	2	R304117-20	7768-020		
J00LH2	SOLID	100.0	864.5 g		04/18/03	2	R304117-21	7768-021		
J00LH3	SOLID	100.0	818.0 g		04/18/03	2	R304117-22	7768-022		
J00LH4	SOLID	100.0	768.3 g		04/18/03	2	R304117-23	7768-023		
J00LH5	SOLID	100.0	683.4 g		04/18/03	2	R304117-24	7768-024		
		Method Blank	SOLID						R304117-25	7768-025

QC SUMMARY

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7768  
 Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

TEST MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALIFIERS
		BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS DUP/ORIG MS/ORIG	
Gamma Spectroscopy								
GAM	SOLID	Gamma Scan	6910-015	15.0	24		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.

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 Protocol Hanford  
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 Form DVD-PBS  
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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

**WORK SUMMARY**

SDG 7768  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG H2167

CLIENT SAMPLE ID	LAB SAMPLE ID				SUF-					
LOCATION	MATRIX	COLLECTED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
CUSTODY	SAF No	RECEIVED								
J00LD2 100-F-23 B00-029-271	SOLID	R304117-01 04/16/03 04/18/03	7768-001	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LD3 100-F-23 B00-029-271	SOLID	R304117-02 04/16/03 04/18/03	7768-002	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LD4 100-F-23 B00-029-271	SOLID	R304117-03 04/16/03 04/18/03	7768-003	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LD5 100-F-23 B00-029-271	SOLID	R304117-04 04/16/03 04/18/03	7768-004	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LD6 100-F-23 B00-029-271	SOLID	R304117-05 04/16/03 04/18/03	7768-005	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LD7 100-F-23 B00-029-271	SOLID	R304117-06 04/16/03 04/18/03	7768-006	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LD8 100-F-23 B00-029-271	SOLID	R304117-07 04/16/03 04/18/03	7768-007	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LD9 100-F-23 B00-029-271	SOLID	R304117-08 04/16/03 04/18/03	7768-008	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF0 100-F-23 B00-029-271	SOLID	R304117-09 04/16/03 04/18/03	7768-009	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF1 100-F-23 B00-029-271	SOLID	R304117-10 04/16/03 04/18/03	7768-010	GAM		04/22/03	04/23/03	MCM	Gamma Scan	

**WORK SUMMARY**

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**SUMMARY DATA SECTION**

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-CWS  
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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7768  
Contact Melissa C. Mannion

**WORK SUMMARY, cont.**

Client Hanford  
Contract No. 630  
Case no SDG\_H2167

CLIENT SAMPLE ID	LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED	PLANCHET	TEST	SUF-	ANALYZED	REVIEWED	BY	METHOD	
CUSTODY	SAF No	RECEIVED			FIX					
J00LF2 100-F-23 B00-029-271	B00-029 SOLID	R304117-11 04/16/03 04/18/03	7768-011	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF3 100-F-23 B00-029-271	B00-029 SOLID	R304117-12 04/16/03 04/18/03	7768-012	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF4 100-F-23 B00-029-271	B00-029 SOLID	R304117-13 04/16/03 04/18/03	7768-013	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF5 100-F-23 B00-029-271	B00-029 SOLID	R304117-14 04/16/03 04/18/03	7768-014	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF6 100-F-23 B00-029-271	B00-029 SOLID	R304117-15 04/16/03 04/18/03	7768-015	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF7 100-F-23 B00-029-271	B00-029 SOLID	R304117-16 04/16/03 04/18/03	7768-016	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF8 100-F-23 B00-029-271	B00-029 SOLID	R304117-17 04/16/03 04/18/03	7768-017	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LF9 100-F-23 B00-029-271	B00-029 SOLID	R304117-18 04/16/03 04/18/03	7768-018	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LH0 100-F-23 B00-029-271	B00-029 SOLID	R304117-19 04/16/03 04/18/03	7768-019	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
J00LH1 100-F-23 B00-029-271	B00-029 SOLID	R304117-20 04/16/03 04/18/03	7768-020	GAM		04/22/03	04/23/03	MCM	Gamma Scan	

WORK SUMMARY

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7768  
Contact Melissa C. Mannion

**WORK SUMMARY, cont.**

Client Hanford  
Contract No. 630  
Case no SDG H2167

CLIENT SAMPLE ID	LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED	PLANCHET	TEST	SUF-	ANALYZED	REVIEWED	BY	METHOD	
CUSTODY	SAF No	RECEIVED			FIX					
J00LH2		R304117-21	7768-021	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
100-F-23	SOLID	04/16/03								
B00-029-271	B00-029	04/18/03								
J00LH3		R304117-22	7768-022	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
100-F-23	SOLID	04/16/03								
B00-029-271	B00-029	04/18/03								
J00LH4		R304117-23	7768-023	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
100-F-23	SOLID	04/16/03								
B00-029-271	B00-029	04/18/03								
J00LH5		R304117-24	7768-024	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
100-F-23	SOLID	04/16/03								
B00-029-271	B00-029	04/18/03								
Method Blank		R304117-25	7768-025	GAM		04/22/03	04/23/03	MCM	Gamma Scan	
	SOLID									
	B00-029									

COUNTS OF TESTS BY SAMPLE TYPE											
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
GAM	B00-029	Gamma Scan	GAMMA_GS	24			1				25
TOTALS				24			1				25

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-CWS  
Version 3.06  
Report date 04/23/03

EBERLINE SERVICES / RICHMOND  
 SAMPLE DELIVERY GROUP H2167

R304117-25

Method Blank

METHOD BLANK

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-25</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7768-025</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.10	U	GAM
Europium 152	14683-23-9	U		0.091	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.11</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.089	0.10	U	GAM
Americium 241	14596-10-2	U		0.26		U	GAM

100 F Area - Quick Turn

QC-BLANK #44478
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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-01

J00LD2

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-01</u>	Client sample id <u>J00LD2</u>	
Dept sample id <u>7768-001</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:27</u>	<u>779.8 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.050	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.18</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.067		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-02

J00LD3

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-02</u>	Client sample id <u>J00LD3</u>	
Dept sample id <u>7768-002</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:29</u>	<u>742.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.049	0.050	U	GAM
Cesium 137	10045-97-3	U		0.045	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.17</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.17		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-03

J00LD4

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-03</u>	Client sample id <u>J00LD4</u>	
Dept sample id <u>7768-003</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:30</u>	<u>730.0 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.081</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.076</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.22</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.26</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.22</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.30</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

R304117-04

J00LD5

**D A T A   S H E E T**

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-04</u>	Client sample id <u>J00LD5</u>	
Dept sample id <u>7768-004</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:25</u>	<u>757.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.044	0.050	U	GAM
Cesium 137	10045-97-3	0.142	0.054	0.054	0.10		GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.21		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-05

J00LD6

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-05</u>	Client sample id <u>J00LD6</u>	
Dept sample id <u>7768-005</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:31</u>	<u>733.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.080</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.19</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.24</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.35</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.22</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.31</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-06

J00LD7

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304117-06</u>	Client sample id <u>J00LD7</u>	
Dept sample id <u>7768-006</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:37 609.5 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.056</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.059</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.084</u>		U	GAM

100 F Area - Quick Turn

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-07

J00LD8

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-07</u>	Client sample id <u>J00LD8</u>	
Dept sample id <u>7768-007</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:32</u>	<u>712.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.051</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.054</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.13</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.076</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-08

J00LD9

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-08</u>	Client sample id <u>J00LD9</u>	
Dept sample id <u>7768-008</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:43</u>	<u>664.1 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.053</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.046</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.13</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.18</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-09

J00LF0

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-09</u>	Client sample id <u>J00LF0</u>	
Dept sample id <u>7768-009</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:39</u>	<u>767.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.045	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.18		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

R304117-10

J00LF1

**D A T A   S H E E T**

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-10</u>	Client sample id <u>J00LF1</u>	
Dept sample id <u>7768-010</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:35</u>	<u>709.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.065</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.050	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.078		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-11

J00LF2

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-11</u>	Client sample id <u>J00LF2</u>	
Dept sample id <u>7768-011</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:45</u>	<u>650.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.067</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.10</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.22</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.61</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-12

J00LF3

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-12</u>	Client sample id <u>J00LF3</u>	
Dept sample id <u>7768-012</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:41</u>	<u>654.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.060</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.042</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.071</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-13

J00LF4

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-13</u>	Client sample id <u>J00LF4</u>	
Dept sample id <u>7768-013</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:36</u>	<u>751.4 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	U		0.043	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.25		U	GAM

100 F Area - Quick Turn

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-14

J00LF5

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-14</u>	Client sample id <u>J00LF5</u>	
Dept sample id <u>7768-014</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:37</u>	<u>773.0 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.16		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

R304117-15

J00LF6

**DATA SHEET**

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-15</u>	Client sample id <u>J00LF6</u>	
Dept sample id <u>7768-015</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:49 664.1 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.072</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.055</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.56</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-16

J00LF7

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-16</u>	Client sample id <u>J00LF7</u>	
Dept sample id <u>7768-016</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:47</u>	<u>732.8 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.051</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.046	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.17</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.16		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

R304117-17

J00LF8

**D A T A   S H E E T**

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-17</u>	Client sample id <u>J00LF8</u>	
Dept sample id <u>7768-017</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:44</u>	<u>740.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.055</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.052</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.10</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.065</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**DATA SHEETS**

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**SUMMARY DATA SECTION**

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-18

J00LF9

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-18</u>	Client sample id <u>J00LF9</u>	
Dept sample id <u>7768-018</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:38</u>	<u>696.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.27		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

R304117-19

J00LHO

**D A T A   S H E E T**

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-19</u>	Client sample id <u>J00LHO</u>	
Dept sample id <u>7768-019</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:38</u>	<u>715.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.16		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-20

J00LH1

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-20</u>	Client sample id <u>J00LH1</u>	
Dept sample id <u>7768-020</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:39</u>	<u>665.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.072</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.061	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.19</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.58		U	GAM

100 F Area - Quick Turn

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-21

J00LH2

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-21</u>	Client sample id <u>J00LH2</u>	
Dept sample id <u>7768-021</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:42</u>	<u>864.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt-60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.10	U	GAM
Europium 152	14683-23-9	U		0.099	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.089	0.10	U	GAM
Americium 241	14596-10-2	U		0.057		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

DATA SHEETS

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SUMMARY DATA SECTION

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-22

J00LH3

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-22</u>	Client sample id <u>J00LH3</u>	
Dept sample id <u>7768-022</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:46</u>	<u>818.0 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	U		0.072	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.13</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.25		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-23

J00LH4

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304117-23</u>	Client sample id <u>J00LH4</u>	
Dept sample id <u>7768-023</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:40</u>	<u>768.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.052</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.094	0.10	U	GAM
Americium 241	14596-10-2	U		0.064		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

DATA SHEETS

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SUMMARY DATA SECTION

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

R304117-24

J00LH5

DATA SHEET

SDG <u>7768</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304117-24</u>	Client sample id <u>J00LH5</u>	
Dept sample id <u>7768-024</u>	Location/Matrix <u>100-F-23</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 08:41</u>	<u>683.4 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-271</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.044	0.050	U	GAM
Cesium 137	10045-97-3	0.111	0.046	0.047	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.17		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2167

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Test GAM Matrix SOLID  
 SDG 7768  
 Contact Melissa C. Mannion

Client Hanford  
 Contract No. 630  
 Contract SDG H2167

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Cobalt 60	Cesium 137
Preparation batch 6910-015						
J00LD2	R304117-01	7768-001			U	U
J00LD3	R304117-02	7768-002			U	U
J00LD4	R304117-03	7768-003			U	U
J00LD5	R304117-04	7768-004			U	0.142
J00LD6	R304117-05	7768-005			U	U
J00LD7	R304117-06	7768-006			U	U
J00LD8	R304117-07	7768-007			U	U
J00LD9	R304117-08	7768-008			U	U
J00LF0	R304117-09	7768-009			U	U
J00LF1	R304117-10	7768-010			U	U
J00LF2	R304117-11	7768-011			U	U
J00LF3	R304117-12	7768-012			U	U
J00LF4	R304117-13	7768-013			U	U
J00LF5	R304117-14	7768-014			U	U
J00LF6	R304117-15	7768-015			U	U
J00LF7	R304117-16	7768-016			U	U
J00LF8	R304117-17	7768-017			U	U
J00LF9	R304117-18	7768-018			U	U
J00LH0	R304117-19	7768-019			U	U
J00LH1	R304117-20	7768-020			U	U
J00LH2	R304117-21	7768-021			U	U
J00LH3	R304117-22	7768-022			U	U
J00LH4	R304117-23	7768-023			U	U
J00LH5	R304117-24	7768-024			U	0.111
BLK (QC ID=44478)	R304117-25	7768-025			U	U

Nominal values and limits from method RDLs (pCi/g) 0.050 0.10  
 100 F Area - Quick Turn

METHOD SUMMARIES

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Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-CMS  
 Version 3.06  
 Report date 04/23/03

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

**METHOD SUMMARY**

GAMMA SCAN  
GAMMA SPECTROSCOPY

Test GAM Matrix SOLID  
SDG 7768  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Contract SDG H2167

**METHOD PERFORMANCE**

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 6910-015      2σ prep error 15.0 %      Reference Lab Notebook 6910 pg. 15																
J00LD2	R304117-01			0.050	780					<u>35</u>			6	04/21/03	04/22	MB,07,00
J00LD3	R304117-02			0.049	742					<u>35</u>			6	04/21/03	04/22	02,04,00
J00LD4	R304117-03			<u>0.081</u>	730					<u>35</u>			6	04/21/03	04/22	02,03,00
J00LD5	R304117-04			0.044	758					<u>31</u>			6	04/21/03	04/22	02,04,00
J00LD6	R304117-05			<u>0.080</u>	733					<u>31</u>			6	04/21/03	04/22	02,03,00
J00LD7	R304117-06			<u>0.056</u>	610					<u>31</u>			6	04/21/03	04/22	MB,07,00
J00LD8	R304117-07			<u>0.051</u>	713					<u>33</u>			6	04/21/03	04/22	MB,07,00
J00LD9	R304117-08			<u>0.053</u>	664					<u>33</u>			6	04/21/03	04/22	02,04,00
J00LF0	R304117-09			0.043	767					<u>34</u>			6	04/21/03	04/22	02,04,00
J00LF1	R304117-10			<u>0.065</u>	710					<u>34</u>			6	04/21/03	04/22	MB,07,00
J00LF2	R304117-11			<u>0.067</u>	651					<u>44</u>			6	04/21/03	04/22	MB,05,00
J00LF3	R304117-12			<u>0.060</u>	654					<u>44</u>			6	04/21/03	04/22	MB,07,00
J00LF4	R304117-13			0.042	751					<u>45</u>			6	04/21/03	04/22	MB,08,00
J00LF5	R304117-14			0.043	773					<u>44</u>			6	04/21/03	04/22	02,04,00
J00LF6	R304117-15			<u>0.072</u>	664					<u>40</u>			6	04/21/03	04/22	MB,05,00
J00LF7	R304117-16			<u>0.051</u>	733					<u>40</u>			6	04/21/03	04/22	02,04,00
J00LF8	R304117-17			<u>0.055</u>	741					<u>40</u>			6	04/21/03	04/22	MB,07,00
J00LF9	R304117-18			0.045	696					<u>41</u>			6	04/21/03	04/22	MB,08,00
J00LH0	R304117-19			0.045	716					<u>44</u>			6	04/21/03	04/22	02,04,00
J00LH1	R304117-20			<u>0.072</u>	665					<u>44</u>			6	04/21/03	04/22	MB,05,00
J00LH2	R304117-21			0.032	864					<u>44</u>			6	04/21/03	04/22	MB,07,00
J00LH3	R304117-22			0.034	818					<u>44</u>			6	04/21/03	04/22	MB,08,00
J00LH4	R304117-23			<u>0.052</u>	768					<u>44</u>			6	04/21/03	04/22	MB,07,00
J00LH5	R304117-24			0.044	683					<u>44</u>			6	04/21/03	04/22	02,04,00
BLK (QC ID=44478)	R304117-25			0.041	610					<u>44</u>				04/21/03	04/22	MB,05,00
Nominal values and limits from method				0.050	610					100				180		

PROCEDURES    REFERENCE    GAMMA\_GS  
CP-100        Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES ± 2 SD        MDA 0.053 ± 0.027  
FOR 25 SAMPLES        YIELD \_\_\_\_\_ ± \_\_\_\_\_

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-CMS  
Version 3.06  
Report date 04/23/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7768  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2167

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 plachets 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 plachet 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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DATA SHEET

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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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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- \* 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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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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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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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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- \* 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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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.

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Special Handling and/or Storage <i>None</i>					Preservation		None																																																														
					Type of Container		Marinelli																																																														
					No. of Container(s)		1																																																														
					Volume		500mL																																																														
SAMPLE ANALYSIS					See item (1) in Special Instructions.																																																																
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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-029-271		Page 3 of 5																																																													
Collector Robert Fahiberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code Data Turnaround																																																													
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Shipped To <i>MA</i> RECRA		Offsite Property No. <i>A030198</i>		Bill of Lading/Air Bill No. <i>5625 ASPC</i>																																																																	
POSSIBLE SAMPLE HAZARDS/REMARKS																																																																					
Special Handling and/or Storage <i>None</i>					Preservation		None																																																														
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Relinquished By/Removed From <i>R. Fahiberg / R. Nielson</i>		Date/Time <i>4/16/03 1430</i>		Received By/Stored In <i>Ref # 3B</i>		Date/Time <i>4/16/03 1430</i>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other																																																											
Relinquished By/Removed From <i>R.F. SB</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>SJOALW</i>		Date/Time <i>4/17/03 0900</i>																																																															
Relinquished By/Removed From <i>SJOALW</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>FED EX</i>																																																																	
Relinquished By/Removed From <i>RED</i>		Date/Time <i>4-18-03</i>		Received By/Stored In <i>RED</i>																																																																	
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LABORATORY SECTION	Received By			Title			Date/Time																																																														
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time																																																														

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B00-029-271	Page 4 of 5
Collector Robert Fahlberg / <i>NIELSON</i>	Company Contact MT Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code	Data Turnaround	
Project Designation 100 F Area - Quick Turn	Sampling Location 100-F-23	<i>506 H2167(7768)</i>		SAF No. B00-029	Air Quality <input type="checkbox"/> <i>7 DAY</i>	
Ice Chest No. <i>ERC 96 002</i>	Field Logbook No. EL-157 <i>2 RF 4-14-03</i>	COA R10F242000	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPL</i>	
Shipped To <i>(TMA) RECRA</i>	Offsite Property No. <i>A030198</i>					

POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage <i>None</i>	Preservation	None																		
	Type of Container	Marinelli																		
	No. of Container(s)	1																		
	Volume	500mL																		

SAMPLE ANALYSIS		See item (1) in Special Instructions.																		
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Sample No.	Matrix *	Sample Date	Sample Time																	
J00LF7	SOIL	4-16-03	0847	X																
J00LF8	SOIL	4-16-03	0844	X																
J00LF9	SOIL	4-16-03	0838	X																
J00LH0	SOIL	4-16-03	0838	X																
J00LH1	SOIL	4-16-03	0839	X																

<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>												<b>Matrix *</b>				
Relinquished By/Removed From <i>Robert Fahlberg / Nielson</i>		Date/Time <i>4/16/03 1430</i>		Received By/Stored In <i>REF # 3B</i>		Date/Time <i>4/16/03 1430</i>		(1) Gamma Spectroscopy - Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>												S=Soil SE=Sediment SO=Solid SL=Sludge W=Water OW=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF 3B</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>SPACE/John</i>		Date/Time <i>4/17/03 0900</i>														
Relinquished By/Removed From <i>SPACE/John</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>FED EX</i>		Date/Time														
Relinquished By/Removed From <i>REF 3B</i>		Date/Time		Received By/Stored In <i>REF 3B</i>		Date/Time <i>1000 4/18/03</i>														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time														

<b>LABORATORY SECTION</b>	Received By	Title												Date/Time
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method	Disposed By												Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-029-271		Page 5 of 5			
Collector Robert Fahberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code			
Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-23 <i>SDG H2167(7768)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/>		Data Turnaround <i>7 DAY</i>			
Ice Chest No. <i>ERC 96 002</i>		Field Logbook No. EL-157 <i>2 RF 4-14-03</i>		COA R10F242000		Method of Shipment Federal Express					
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030198</i>				Bill of Lading/Air Bill No. <i>SEE ASPC</i>					
POSSIBLE SAMPLE HAZARDS/REMARKS					Preservation	None					
Special Handling and/or Storage <i>None</i>					Type of Container	Marinelli					
					No. of Container(s)	1					
					Volume	500mL					
SAMPLE ANALYSIS					See item (1) in Special Instructions.						
Sample No.	Matrix *	Sample Date	Sample Time								
<i>J00LH2</i>	SOIL	<i>4-16-03</i>	<i>0842</i>	<i>X</i>							
<i>J00LH3</i>	SOIL	<i>4-16-03</i>	<i>0846</i>	<i>X</i>							
<i>J00LH4</i>	SOIL	<i>4-16-03</i>	<i>0840</i>	<i>X</i>							
<i>J00LH5</i>	SOIL	<i>4-16-03</i>	<i>0841</i>	<i>X</i>							
		<i>4-16-03</i>	<i>RIN</i>								
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS					Matrix *	
Relinquished By/Removed From <i>R. Nielson</i>		Date/Time <i>4/16/03</i>		Received By/Stored In <i>Ref # 3B</i>		Date/Time <i>4/16/03 1430</i>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>			S=Soil SB=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF 3B</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>SJALE/MLB</i>		Date/Time <i>4/17/03 0900</i>					
Relinquished By/Removed From <i>SJALE/MLB</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>FED EX</i>		Date/Time		Received By/Stored In <i>Ref # 3B</i>		Date/Time <i>4/18/03</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION	Received By			Title			Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time				



# ANALYTICAL SERVICES GROUP

Richmond, CA Laboratory

## SAMPLE RECEIPT CHECKLIST

Client: BHI Date/Time received 1000 4-18-03

CoC No. B 00-029-271

Container I.D. No. CRC-02-107 Requested TAT (Days) 3 P.O. Received Yes [ ] No [ ]

**INSPECTION**

- Custody seals on shipping container intact? Yes [  ] No [ ] N/A [ ]
- Custody seals on shipping container dated & signed? Yes [  ] No [ ] N/A [ ]
- Custody seals on sample containers intact? Yes [  ] No [ ] N/A [ ]
- Custody seals on sample containers dated & signed? Yes [  ] No [ ] N/A [ ]
- Packing material is: 24 Wet [ ] Dry [  ]
- Number of samples in shipping container: 1
- Number of containers per sample: 1 (Or see CoC \_\_\_\_\_)
- Paperwork agrees with samples? Yes [  ] No [ ]
- Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [  ]
- Samples are: In good condition [  ] Leaking [ ] Broken Container [ ] Missing [ ]
- Samples are: Preserved [ ] Not preserved [  ] Preservative \_\_\_\_\_
- Describe any anomalies: \_\_\_\_\_

13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_

14. Received by How CA Date: 4-18-03 Time: 1000

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_

Alpha Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_

Beta/Gamma Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_



EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

SDG 7769  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG H2167

S U M M A R Y   D A T A   S E C T I O N

T A B L E   O F   C O N T E N T S	
About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	9
Data Sheets	10
Method Summaries	34
Report Guides	36
End of Section	50

Melissa Mannion  
Prepared by

Melissa Mannion  
Reviewed by

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 04/23/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
 Contract No. 630  
 Case no SDG\_H2167

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

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-RG  
 Version 3.06  
 Report date 04/23/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7769  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG\_H2167

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.

**EBERLINE SERVICES/RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

SDG 7769  
 Contact Melissa C. Mannion

**LAB SAMPLE SUMMARY**

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R304118-01	J00LH6	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:41
R304118-02	J00LH7	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:43
R304118-03	J00LH8	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:51
R304118-04	J00LH9	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:57
R304118-05	J00LJ0	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:53
R304118-06	J00LJ1	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:55
R304118-07	J00LJ2	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:59
R304118-08	J00LJ3	100-F-24	SOLID		800-029	B00-029-272	04/16/03 10:01
R304118-09	J00LJ4	100-F-24	SOLID		800-029	B00-029-272	04/16/03 10:03
R304118-10	J00LJ5	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:59
R304118-11	J00LJ6	100-F-24	SOLID		800-029	B00-029-272	04/16/03 10:07
R304118-12	J00LJ7	100-F-24	SOLID		800-029	B00-029-272	04/16/03 10:05
R304118-13	J00LJ8	100-F-24	SOLID		800-029	B00-029-272	04/16/03 10:00
R304118-14	J00LJ9	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:57
R304118-15	J00LK0	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:54
R304118-16	J00LK1	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:53
R304118-17	J00LK2	100-F-24	SOLID		800-029	B00-029-272	04/16/03 10:02
R304118-18	J00LK3	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:56
R304118-19	J00LK4	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:47
R304118-20	J00LK5	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:49
R304118-21	J00LK6	100-F-24	SOLID		800-029	B00-029-272	04/16/03 10:09
R304118-22	J00LK7	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:46
R304118-23	J00LK8	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:51
R304118-24	J00LK9	100-F-24	SOLID		800-029	B00-029-272	04/16/03 09:52
R304118-25	Method Blank		SOLID		800-029		

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

**QC SUMMARY**

SDG 7769  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG H2167

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
7769	800-029-272	J00LH6	SOLID	100.0	815.8 g		04/18/03	2	R304118-01	7769-001
		J00LH7	SOLID	100.0	786.1 g		04/18/03	2	R304118-02	7769-002
		J00LH8	SOLID	100.0	825.2 g		04/18/03	2	R304118-03	7769-003
		J00LH9	SOLID	100.0	625.5 g		04/18/03	2	R304118-04	7769-004
		J00LJ0	SOLID	100.0	795.5 g		04/18/03	2	R304118-05	7769-005
		J00LJ1	SOLID	100.0	689.9 g		04/18/03	2	R304118-06	7769-006
		J00LJ2	SOLID	100.0	822.6 g		04/18/03	2	R304118-07	7769-007
		J00LJ3	SOLID	100.0	759.5 g		04/18/03	2	R304118-08	7769-008
		J00LJ4	SOLID	100.0	646.6 g		04/18/03	2	R304118-09	7769-009
		J00LJ5	SOLID	100.0	758.7 g		04/18/03	2	R304118-10	7769-010
		J00LJ6	SOLID	100.0	693.6 g		04/18/03	2	R304118-11	7769-011
		J00LJ7	SOLID	100.0	685.6 g		04/18/03	2	R304118-12	7769-012
		J00LJ8	SOLID	100.0	815.3 g		04/18/03	2	R304118-13	7769-013
		J00LJ9	SOLID	100.0	803.0 g		04/18/03	2	R304118-14	7769-014
		J00LK0	SOLID	100.0	809.5 g		04/18/03	2	R304118-15	7769-015
		J00LK1	SOLID	100.0	817.2 g		04/18/03	2	R304118-16	7769-016
		J00LK2	SOLID	100.0	739.9 g		04/18/03	2	R304118-17	7769-017
		J00LK3	SOLID	100.0	732.8 g		04/18/03	2	R304118-18	7769-018
		J00LK4	SOLID	100.0	762.2 g		04/18/03	2	R304118-19	7769-019
		J00LK5	SOLID	100.0	783.3 g		04/18/03	2	R304118-20	7769-020
		J00LK6	SOLID	100.0	725.1 g		04/18/03	2	R304118-21	7769-021
		J00LK7	SOLID	100.0	756.4 g		04/18/03	2	R304118-22	7769-022
		J00LK8	SOLID	100.0	801.7 g		04/18/03	2	R304118-23	7769-023
		J00LK9	SOLID	100.0	731.9 g		04/18/03	2	R304118-24	7769-024
		Method Blank	SOLID						R304118-25	7769-025

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-QS  
Version 3.06  
Report date 04/23/03

QC SUMMARY

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SUMMARY DATA SECTION

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED			QUALI-	
			BATCH	2σ %	CLIENT	MORE	RE		BLANK
Gamma Spectroscopy									
GAM	SOLID	Gamma Scan	6910-018	15.0	24		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 Hanford  
 Version Ver 1.0  
 Form DVD-PBS  
 Version 3.06  
 Report date 04/23/03

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

**LAB WORK SUMMARY**

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R304118-01 04/16/03 04/18/03	J00LH6 100-F-24 B00-029-272	B00-029	SOLID	7769-001	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-02 04/16/03 04/18/03	J00LH7 100-F-24 B00-029-272	B00-029	SOLID	7769-002	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-03 04/16/03 04/18/03	J00LH8 100-F-24 B00-029-272	B00-029	SOLID	7769-003	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-04 04/16/03 04/18/03	J00LH9 100-F-24 B00-029-272	B00-029	SOLID	7769-004	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-05 04/16/03 04/18/03	J00LJ0 100-F-24 B00-029-272	B00-029	SOLID	7769-005	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-06 04/16/03 04/18/03	J00LJ1 100-F-24 B00-029-272	B00-029	SOLID	7769-006	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-07 04/16/03 04/18/03	J00LJ2 100-F-24 B00-029-272	B00-029	SOLID	7769-007	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-08 04/16/03 04/18/03	J00LJ3 100-F-24 B00-029-272	B00-029	SOLID	7769-008	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-09 04/16/03 04/18/03	J00LJ4 100-F-24 B00-029-272	B00-029	SOLID	7769-009	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-10 04/16/03 04/18/03	J00LJ5 100-F-24 B00-029-272	B00-029	SOLID	7769-010	GAM		04/22/03	04/23/03	MCM	Gamma Scan

**WORK SUMMARY**

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Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LWS  
 Version 3.06  
 Report date 04/23/03

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

**WORK SUMMARY, cont.**

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R304118-11 04/16/03 04/18/03	J00LJ6 100-F-24 B00-029-272	B00-029	SOLID	7769-011	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-12 04/16/03 04/18/03	J00LJ7 100-F-24 B00-029-272	B00-029	SOLID	7769-012	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-13 04/16/03 04/18/03	J00LJ8 100-F-24 B00-029-272	B00-029	SOLID	7769-013	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-14 04/16/03 04/18/03	J00LJ9 100-F-24 B00-029-272	B00-029	SOLID	7769-014	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-15 04/16/03 04/18/03	J00LK0 100-F-24 B00-029-272	B00-029	SOLID	7769-015	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-16 04/16/03 04/18/03	J00LK1 100-F-24 B00-029-272	B00-029	SOLID	7769-016	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-17 04/16/03 04/18/03	J00LK2 100-F-24 B00-029-272	B00-029	SOLID	7769-017	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-18 04/16/03 04/18/03	J00LK3 100-F-24 B00-029-272	B00-029	SOLID	7769-018	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-19 04/16/03 04/18/03	J00LK4 100-F-24 B00-029-272	B00-029	SOLID	7769-019	GAM		04/22/03	04/23/03	MCM	Gamma Scan
R304118-20 04/16/03 04/18/03	J00LK5 100-F-24 B00-029-272	B00-029	SOLID	7769-020	GAM		04/22/03	04/23/03	MCM	Gamma Scan

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LWS  
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 Report date 04/23/03

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

**WORK SUMMARY, cont.**

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX ANALYZED	REVIEWED	BY	METHOD
R304118-21 04/16/03 04/18/03	J00LK6 100-F-24 800-029-272	B00-029	SOLID	7769-021	GAM	04/22/03	04/23/03	MCM	Gamma Scan
R304118-22 04/16/03 04/18/03	J00LK7 100-F-24 800-029-272	B00-029	SOLID	7769-022	GAM	04/22/03	04/23/03	MCM	Gamma Scan
R304118-23 04/16/03 04/18/03	J00LK8 100-F-24 800-029-272	B00-029	SOLID	7769-023	GAM	04/22/03	04/23/03	MCM	Gamma Scan
R304118-24 04/16/03 04/18/03	J00LK9 100-F-24 800-029-272	B00-029	SOLID	7769-024	GAM	04/22/03	04/23/03	MCM	Gamma Scan
R304118-25	Method Blank		SOLID B00-029	7769-025	GAM	04/22/03	04/23/03	MCM	Gamma Scan

COUNTS OF TESTS BY SAMPLE TYPE										
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	B00-029	Gamma Scan	GAMMA_GS	24			1			25
TOTALS				24			1			25

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LWS  
 Version 3.06  
 Report date 04/23/03

EBERLINE SERVICES / RICHMOND  
 SAMPLE DELIVERY GROUP H2167

7769-025

Method Blank

METHOD BLANK

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-25</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7769-025</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.017	0.050	U	GAM
Cesium 137	10045-97-3	U		0.022	0.10	U	GAM
Europium 152	14683-23-9	U		0.035	0.10	U	GAM
Europium 154	15585-10-1	U		0.081	0.10	U	GAM
Europium 155	14391-16-3	U		0.040	0.10	U	GAM
Americium 241	14596-10-2	U		0.065		U	GAM

100 F Area - Quick Turn

QC-BLANK #44479
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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-001

J00LH6

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-01</u>	Client sample id <u>J00LH6</u>	
Dept sample id <u>7769-001</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:41</u> <u>815.8 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Cesium 137	10045-97-3	0.065	0.033	0.037	0.10		GAM
Europium 152	14683-23-9	U		0.089	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.24		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-002

J00LH7

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304118-02</u>	Client sample id <u>J00LH7</u>	
Dept sample id <u>7769-002</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:43</u>	<u>786.1 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.053</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.057</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.10</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.066</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-003

J00LH8

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-03</u>	Client sample id <u>J00LH8</u>	
Dept sample id <u>7769-003</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:51</u>	<u>825.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.25		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7769-004

J00LH9

**D A T A   S H E E T**

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	<u>SDG_H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-04</u>	Client sample id <u>J00LH9</u>	
Dept sample id <u>7769-004</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:57</u>	<u>625.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.052</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.047	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.20</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.13</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.19		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-005

J00LJ0

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-05</u>	Client sample id <u>J00LJ0</u>	
Dept sample id <u>7769-005</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:53</u>	<u>795.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.064</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.068	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.22</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.54		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-006

J00LJ1

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-06</u>	Client sample id <u>J00LJ1</u>	
Dept sample id <u>7769-006</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:55</u>	<u>689.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.046	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.17</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.17		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7769-007

J00LJ2

**D A T A   S H E E T**

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-07</u>	Client sample id <u>J00LJ2</u>	
Dept sample id <u>7769-007</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:59</u>	<u>822.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.050	0.050	U	GAM
Cesium 137	10045-97-3	U		0.057	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.065		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-008

J00LJ3

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-08</u>	Client sample id <u>J00LJ3</u>	
Dept sample id <u>7769-008</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 10:01</u>	<u>759.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.038	0.050	U	GAM
Cesium 137	10045-97-3	U		0.056	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.11</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.27		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-009

J00LJ4

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-09</u>	Client sample id <u>J00LJ4</u>	
Dept sample id <u>7769-009</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 10:03</u>	<u>646.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.083</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.078</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.16</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.24</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.21</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.63</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-010

J00LJ5

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-10</u>	Client sample id <u>J00LJ5</u>	
Dept sample id <u>7769-010</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:59</u>	<u>758.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.043	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM

100 F Area - Quick Turn

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-011

J00LJ6

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-11</u>	Client sample id <u>J00LJ6</u>	
Dept sample id <u>7769-011</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 10:07</u>	<u>693.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.066</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.054</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.58</u>		U	GAM

100 F Area - Quick Turn

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7769-012

J00LJ7

**DATA SHEET**

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-12</u>	Client sample id <u>J00LJ7</u>	
Dept sample id <u>7769-012</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 10:05</u>	<u>685.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.059</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.070	0.049	0.061	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.17</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Americium 241	14596-10-2	U		0.066		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7769-013

J00LJ8

**D A T A   S H E E T**

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-13</u>	Client sample id <u>J00LJ8</u>	
Dept sample id <u>7769-013</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 10:00</u>	<u>815.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.037	0.10	U	GAM
Europium 152	14683-23-9	U		0.089	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.24		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-014

J00LJ9

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-14</u>	Client sample id <u>J00LJ9</u>	
Dept sample id <u>7769-014</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:57</u>	<u>803.0 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.046	0.050	U	GAM
Cesium 137	10045-97-3	U		0.066	0.10	U	GAM
Europium 152	14683-23-9	U		0.096	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7769-015

J00LK0

**D A T A   S H E E T**

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-15</u>	Client sample id <u>J00LK0</u>	
Dept sample id <u>7769-015</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:54</u>	<u>809.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.061</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.050	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.18</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.49		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-016

J00LK1

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-16</u>	Client sample id <u>J00LK1</u>	
Dept sample id <u>7769-016</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:53</u> <u>817.2 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.054</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.043	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.088	0.10	U	GAM
Americium 241	14596-10-2	U		0.059		U	GAM

100 F Area - Quick Turn

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Lab id <u>EBRLNE</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-017

J00LK2

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-17</u>	Client sample id <u>J00LK2</u>	
Dept sample id <u>7769-017</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 10:02</u>	<u>739.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Cesium 137	10045-97-3	0.105	0.042	0.046	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.26		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-018

J00LK3

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-18</u>	Client sample id <u>J00LK3</u>	
Dept sample id <u>7769-018</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:56</u>	<u>732.8 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.071</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.16</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.17</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.28</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.18</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.24		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-019

J00LK4

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-19</u>	Client sample id <u>J00LK4</u>	
Dept sample id <u>7769-019</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:47</u>	<u>762.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.052</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.051</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.20</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.13</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.20</u>		U	GAM

100 F Area - Quick Turn

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Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-020

J00LK5

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-20</u>	Client sample id <u>J00LK5</u>	
Dept sample id <u>7769-020</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:49</u>	<u>783.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.10	U	GAM
Europium 152	14683-23-9	U		0.073	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.087	0.10	U	GAM
Americium 241	14596-10-2	U		0.11		U	GAM

100 F Area - Quick Turn

DATA SHEETS

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SUMMARY DATA SECTION

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-021

J00LK6

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-21</u>	Client sample id <u>J00LK6</u>	
Dept sample id <u>7769-021</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 10:09</u>	<u>725.1 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.048	0.050	U	GAM
Cesium 137	10045-97-3	0.074	0.041	0.045	0.10		GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.17</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.43		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7769-022

J00LK7

**D A T A   S H E E T**

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-22</u>	Client sample id <u>J00LK7</u>	
Dept sample id <u>7769-022</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:46</u>	<u>756.4 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	0.054	0.025	0.032	0.10		GAM
Europium 152	14683-23-9	U		0.087	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.080	0.10	U	GAM
Americium 241	14596-10-2	U		0.048		U	GAM

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
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Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-023

J00LK8

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-23</u>	Client sample id <u>J00LK8</u>	
Dept sample id <u>7769-023</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:51</u>	<u>801.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.031	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.10	U	GAM
Europium 152	14683-23-9	U		0.079	0.10	U	GAM
Europium 154	15585-10-1	U		0.094	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Americium 241	14596-10-2	U		0.19		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7769-024

J00LK9

DATA SHEET

SDG <u>7769</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304118-24</u>	Client sample id <u>J00LK9</u>	
Dept sample id <u>7769-024</u>	Location/Matrix <u>100-F-24</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 09:52</u>	<u>731.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-272</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.088</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.081	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.18</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.30</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.19</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.25		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/03</u>

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

Test GAM Matrix SOLID  
 SDG 7769  
 Contact Melissa C. Mannion

**LAB METHOD SUMMARY**

GAMMA SCAN  
 GAMMA SPECTROSCOPY

Client Hanford  
 Contract No. 630  
 Contract SDG H2167

**RESULTS**

LAB            RAW    SUF-  
 SAMPLE ID    TEST FIX    PLANCHET    CLIENT SAMPLE ID            Cobalt 60    Cesium 137

Preparation batch 6910-018					
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
R304118-01		7769-001	J00LH6	U	0.065
R304118-02		7769-002	J00LH7	U	U
R304118-03		7769-003	J00LH8	U	U
R304118-04		7769-004	J00LH9	U	U
R304118-05		7769-005	J00LJ0	U	U
R304118-06		7769-006	J00LJ1	U	U
R304118-07		7769-007	J00LJ2	U	U
R304118-08		7769-008	J00LJ3	U	U
R304118-09		7769-009	J00LJ4	U	U
R304118-10		7769-010	J00LJ5	U	U
R304118-11		7769-011	J00LJ6	U	U
R304118-12		7769-012	J00LJ7	U	0.070
R304118-13		7769-013	J00LJ8	U	U
R304118-14		7769-014	J00LJ9	U	U
R304118-15		7769-015	J00LK0	U	U
R304118-16		7769-016	J00LK1	U	U
R304118-17		7769-017	J00LK2	U	0.105
R304118-18		7769-018	J00LK3	U	U
R304118-19		7769-019	J00LK4	U	U
R304118-20		7769-020	J00LK5	U	U
R304118-21		7769-021	J00LK6	U	0.074
R304118-22		7769-022	J00LK7	U	0.054
R304118-23		7769-023	J00LK8	U	U
R304118-24		7769-024	J00LK9	U	U
R304118-25		7769-025	BLK (QC ID=44479)	U	U

Nominal values and limits from method            RDLs (pCi/g)            0.050            0.10  
 100 F Area - Quick Turn

METHOD SUMMARIES

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

Test GAM Matrix SOLID  
 SDG 7769  
 Contact Melissa C. Mannion

Client Hanford  
 Contract No. 630  
 Contract SDG H2167

**LAB METHOD SUMMARY**

GAMMA SCAN  
 GAMMA SPECTROSCOPY

**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 6910-018			2σ prep error 15.0 % Reference Lab Notebook 6910 pg. 18														
R304118-01			J00LH6		0.037	816								6	04/21/03	04/22	MB,08,00
R304118-02			J00LH7		0.053	786								6	04/21/03	04/22	MB,07,00
R304118-03			J00LH8		0.036	825								6	04/21/03	04/22	MB,08,00
R304118-04			J00LH9		0.052	625								6	04/21/03	04/22	02,04,00
R304118-05			J00LJ0		0.064	795								6	04/21/03	04/22	MB,05,00
R304118-06			J00LJ1		0.046	690								6	04/21/03	04/22	02,04,00
R304118-07			J00LJ2		0.050	823								6	04/21/03	04/22	MB,07,00
R304118-08			J00LJ3		0.038	760								6	04/21/03	04/22	MB,08,00
R304118-09			J00LJ4		0.083	647								6	04/21/03	04/22	MB,05,00
R304118-10			J00LJ5		0.045	759								6	04/21/03	04/22	02,04,00
R304118-11			J00LJ6		0.066	694								6	04/21/03	04/22	MB,05,00
R304118-12			J00LJ7		0.059	686								6	04/21/03	04/22	MB,07,00
R304118-13			J00LJ8		0.043	815								6	04/21/03	04/22	MB,08,00
R304118-14			J00LJ9		0.046	803								6	04/21/03	04/22	02,04,00
R304118-15			J00LK0		0.061	809								6	04/21/03	04/22	MB,05,00
R304118-16			J00LK1		0.054	817								6	04/21/03	04/22	MB,07,00
R304118-17			J00LK2		0.037	740								6	04/21/03	04/22	MB,08,00
R304118-18			J00LK3		0.071	733								6	04/21/03	04/22	02,03,00
R304118-19			J00LK4		0.052	762								6	04/21/03	04/22	02,03,00
R304118-20			J00LK5		0.031	783								6	04/21/03	04/22	02,04,00
R304118-21			J00LK6		0.048	725								6	04/21/03	04/22	MB,05,00
R304118-22			J00LK7		0.036	756								6	04/21/03	04/22	MB,07,00
R304118-23			J00LK8		0.031	802								6	04/21/03	04/22	MB,08,00
R304118-24			J00LK9		0.088	732								6	04/21/03	04/22	02,03,00
R304118-25			BLK (QC ID=44479)		0.017	625									04/21/03	04/22	01,04,00
Nominal values and limits from method					0.050	625									100		180

PROCEDURES REFERENCE GAMMA\_GS  
 CP-100 Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES ± 2 SD MDA 0.050 ± 0.033  
 FOR 25 SAMPLES YIELD \_\_\_\_\_ ± \_\_\_\_\_

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

Client Hanford  
 Contract No. 630  
 Case no SDG\_H2167

REPORT GUIDE

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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SAMPLE DELIVERY GROUP H2167

SDG 7769  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG\_H2167

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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SAMPLE DELIVERY GROUP H2167

SDG 7769  
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REPORT GUIDE

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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REPORT GUIDE

DATA SHEET

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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SAMPLE DELIVERY GROUP H2167

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GUIDE, cont.

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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SDG 7769  
 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
 Contract No. 630  
 Case no SDG\_H2167

DATA SHEET

- \* 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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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

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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SAMPLE DELIVERY GROUP H2167

SDG 7769  
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

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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Contact Melissa C. Mannion

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GUIDE, cont.

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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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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**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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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.

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SUMMARY DATA SECTION

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Lab id EBRINE

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Collector Robert Fahberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code		
Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-24		<i>SOA H2167 (7769)</i>		SAF No. B00-029		Data Turnaround <i>7 DAY</i>		
Ice Chest No. <i>ERC 96 002</i>		Field Logbook No. EL-1572 <i>KE 4/14/03</i>		COA R10F242000		Method of Shipment Federal Express				
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030198</i>				Bill of Lading/Air Bill No. <i>SEE OSPC</i>				
POSSIBLE SAMPLE HAZARDS/REMARKS					Preservation	None				
Special Handling and/or Storage					Type of Container	Marinelli				
					No. of Container(s)	1				
					Volume	500mL				
SAMPLE ANALYSIS					See item (1) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time							
<i>J00LH6</i>	SOIL	<i>4-16-03</i>	<i>0941</i>	<i>X</i>						
<i>J00LH7</i>	SOIL	<i>4-16-03</i>	<i>0943</i>	<i>X</i>						
<i>J00LH8</i>	SOIL	<i>4-16-03</i>	<i>0951</i>	<i>X</i>						
<i>J00LH9</i>	SOIL	<i>4-16-03</i>	<i>0957</i>	<i>X</i>						
<i>J00LJ0</i>	SOIL	<i>4-16-03</i>	<i>0953</i>	<i>X</i>						
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS					
Relinquished By/Removed From		Date/Time		Sign/Print Names		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid Sl=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid V=Vegetation X=Other
<i>Robert Fahberg</i>		<i>4/16/03 1430</i>		<i>REC # 3B</i>		<i>4/16/03 1430</i>				
<i>REC 3B</i>		<i>41703 0900</i>		<i>5J GALE</i>		<i>41703 0900</i>				
<i>SIOWS</i>		<i>41703 0900</i>		<i>FED EX</i>						
<i>FED EX</i>				<i>REC # 3B</i>		<i>4-18-03 1000</i>				
					Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>					
LABORATORY SECTION	Received By	Title				Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time				

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			B00-029-272	Page 2 of 3
Collector Robert Fahlgberg / <i>NIELSON</i>	Company Contact MT Stankovich	Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code	Data Turnaround	
Project Designation 100 F Area - Quick Turn	Sampling Location 100-F-24	<i>SDA H2167 (7769)</i>	SAF No. B00-029	Air Quality <input type="checkbox"/>	<i>7 DAY</i>	
Ice Chest No. <i>ERC 96002</i>	Field Logbook No. EL-1571 <i>REF 41703</i>	COA R10F242000	Method of Shipment Federal Express			
Shipped To <i>(TMA) RECRA</i>	Offsite Property No. <i>A030198</i>	Bill of Lading/Air Bill No. <i>SEE OSPC</i>				

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None																		
	Special Handling and/or Storage	Type of Container	Marinelli																	
		No. of Container(s)	1																	
		Volume	500mL																	

SAMPLE ANALYSIS				See item (1) in Special Instructions.																
Sample No.	Matrix *	Sample Date	Sample Time																	
<i>J00LJ1</i>	SOIL	<i>4-16-03</i>	<i>0955</i>	<i>X</i>																
<i>J00LJ2</i>	SOIL	<i>4-16-03</i>	<i>0959</i>	<i>X</i>																
<i>J00LJ3</i>	SOIL	<i>4-16-03</i>	<i>1001</i>	<i>X</i>																
<i>J00LJ4</i>	SOIL	<i>4-16-03</i>	<i>1003</i>	<i>X</i>																
<i>J00LJ5</i>	SOIL	<i>4-16-03</i>	<i>0959</i>	<i>X</i>																

<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>												<b>Matrix *</b>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>												S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other
<i>NIELSON</i>		<i>4/16/03 1430</i>		<i>REF # 3B</i>		<i>4/16/03 1430</i>														
<i>REF 3B</i>		<i>41703 0900</i>		<i>SIOTAL</i>		<i>41703 0900</i>														
<i>S. Stankovich</i>		<i>41703 0900</i>		<i>FED EX</i>																
<i>FED EX</i>				<i>REF #</i>		<i>4-18-03-1000</i>														

<b>LABORATORY SECTION</b>	Received By	Title										Date/Time
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method	Disposed By										Date/Time



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-029-272		Page 4 of 5				
Collector Robert Fahlberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code		Data Turnaround		
Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-24 <i>SDG-H2167(7769)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/>		<i>7 DAY</i>				
Ice Chest No. <i>ERC 96 002</i>		Field Logbook No. EL-157 <i>Ref 4-14-03</i>		COA R10F242000		Method of Shipment Federal Express						
Shipped To <i>(TMA) RECRA</i>		Offsite Property No. <i>A030198</i>				Bill of Lading/Air Bill No. <i>36505PC</i>						
POSSIBLE SAMPLE HAZARDS/REMARKS					Preservation		None					
Special Handling and/or Storage <i>None</i>					Type of Container		Marinelli					
					No. of Container(s)		1					
					Volume		500mL					
SAMPLE ANALYSIS					See item (1) in Special Instructions.							
Sample No.		Matrix *	Sample Date	Sample Time								
<i>J00LK1</i>		SOIL	<i>4-16-03</i>	<i>0953</i>	<i>X</i>							
<i>J00LK2</i>		SOIL	<i>4-16-03</i>	<i>1002</i>	<i>X</i>							
<i>J00LK3</i>		SOIL	<i>4-16-03</i>	<i>0956</i>	<i>X</i>							
<i>J00LK4</i>		SOIL	<i>4-16-03</i>	<i>0947</i>	<i>X</i>							
<i>J00LK5</i>		SOIL	<i>4-16-03</i>	<i>0949</i>	<i>X</i>							
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS		Matrix *					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>38</i> on <i>4/17/03</i>			S=Soil SE=Sediment SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
<i>Robert Fahlberg / Nielson</i>		<i>4/16/03 1430</i>		<i>Ref # 38</i>		<i>4/16/03 1430</i>						
<i>REF 3B</i>		<i>4/17/03 0900</i>		<i>SJONAL</i>		<i>4/17/03 0900</i>						
<i>SJONAL</i>		<i>4/17/03 0900</i>		<i>FED EX</i>								
<i>FED EX</i>				<i>Ref #</i>		<i>4-18-03 1000</i>						
LABORATORY SECTION		Received By		Title		Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time						

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-029-272	Page 5 of 5	
Collector Robert Fahlberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620	Project Coordinator KESSNER, JH	Price Code	Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-24		SOG H2167 (7769)		SAF No. B00-029	Air Quality <input type="checkbox"/> 7 DAY	
Ice Chest No. ERC 96 002		Field Logbook No. EL-1572 RE 4.14.03	COA R10F242000		Method of Shipment Federal Express			
Shipped To <u>TMA</u> RECRA		Offsite Property No. A030198		Bill of Lading/Air Bill No. <i>SEE ASPC</i>				
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None			
Special Handling and/or Storage				Type of Container	Marinelli			
				No. of Container(s)	1			
				Volume	500mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions.				
Sample No.	Matrix *	Sample Date	Sample Time					
J00LK6	SOIL	4-16-03	1009	X				
J00LK7	SOIL	4-16-03	0946	X				
J00LK8	SOIL	4-16-03	0951	X				
J00LK9	SOIL	4-16-03	0952	X				
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS		
Relinquished By/Removed From <i>R. Nielson</i>		Date/Time 4/30	Received By/Stored In <i>REF # 3B</i>		Date/Time 4/16/03	(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>		
Relinquished By/Removed From <i>REF # 3B</i>		Date/Time 4/17/03	Date/Time 0900	Received By/Stored In <i>SJOALD</i>				Date/Time 4/17/03
Relinquished By/Removed From <i>SJOALD</i>		Date/Time 4/17/03	Date/Time 0900	Received By/Stored In <i>FED EX</i>				Date/Time
Relinquished By/Removed From <i>FED EX</i>		Date/Time	Date/Time	Received By/Stored In <i>L. J.</i>				Date/Time 4.18.03
Relinquished By/Removed From		Date/Time	Date/Time	Received By/Stored In				Date/Time
Relinquished By/Removed From		Date/Time	Date/Time	Received By/Stored In				Date/Time
LABORATORY SECTION		Received By		Title		Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time		



**ANALYTICAL SERVICES GROUP**

Richmond, CA Laboratory

**SAMPLE RECEIPT CHECKLIST**

Client: BHI Date/Time received 1000 4-18-03

CoC No. B00-029-272

Container I.D. No. GRC-96-961 Requested TAT (Days) 3 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: 24
- 7. Number of containers per sample: 1 (Or see CoC                     )
- 8. Paperwork agrees with samples? Yes [] No [ ]
- 9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels []
- 10. Samples are: In good condition [] Leaking [ ] Broken Container [ ] Missing [ ]
- 11. Samples are: Preserved [ ] Not preserved [] Preservative
- 12. Describe any anomalies:
- 13. Was P.M. notified of any anomalies? Yes [ ] No [] Date
- 14. Received by [Signature] Date: 4-18-03 Time: 1000

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No.                      Calibration date                     

Alpha Meter Ser. No.                      Calibration date                     

Beta/Gamma Meter Ser. No.                      Calibration date



EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG\_H2167

S U M M A R Y   D A T A   S E C T I O N

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Melissa Mannion  
Prepared by

Melissa Mannion  
Reviewed by

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 04/24/03

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
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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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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG\_H2167

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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Lab id EBRLNE  
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**EBERLINE SERVICES/RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

SDG 7770  
 Contact Melissa C. Mannion

**LAB SAMPLE SUMMARY**

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R304119-01	J00LLO	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:21
R304119-02	J00LL1	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:25
R304119-03	J00LL2	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:27
R304119-04	J00LL3	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:23
R304119-05	J00LL4	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:29
R304119-06	J00LL5	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:31
R304119-07	J00LL6	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:37
R304119-08	J00LL7	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:43
R304119-09	J00LL8	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:41
R304119-10	J00LL9	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:32
R304119-11	J00LM0	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:37
R304119-12	J00LM1	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:35
R304119-13	J00LM2	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:33
R304119-14	J00LM3	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:31
R304119-15	J00LM4	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:35
R304119-16	J00LM5	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:29
R304119-17	J00LM6	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:28
R304119-18	J00LM7	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:30
R304119-19	J00LM8	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:22
R304119-20	J00LM9	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:21
R304119-21	J00LN0	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:20
R304119-22	J00LN1	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:26
R304119-23	J00LN2	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:25
R304119-24	J00LN3	100-F-25	SOLID		B00-029	B00-029-273	04/16/03 11:24
R304119-25	Method Blank		SOLID		B00-029		

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LS  
 Version 3.06  
 Report date 04/24/03

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7770  
 Contact Melissa C. Mannion

**QC SUMMARY**

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

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
7770	800-029-273	J00LL0	SOLID	100.0	722.1 g		04/18/03	2	R304119-01	7770-001
		J00LL1	SOLID	100.0	755.6 g		04/18/03	2	R304119-02	7770-002
		J00LL2	SOLID	100.0	690.5 g		04/18/03	2	R304119-03	7770-003
		J00LL3	SOLID	100.0	854.1 g		04/18/03	2	R304119-04	7770-004
		J00LL4	SOLID	100.0	752.4 g		04/18/03	2	R304119-05	7770-005
		J00LL5	SOLID	100.0	661.7 g		04/18/03	2	R304119-06	7770-006
		J00LL6	SOLID	100.0	803.3 g		04/18/03	2	R304119-07	7770-007
		J00LL7	SOLID	100.0	658.4 g		04/18/03	2	R304119-08	7770-008
		J00LL8	SOLID	100.0	783.1 g		04/18/03	2	R304119-09	7770-009
		J00LL9	SOLID	100.0	869.8 g		04/18/03	2	R304119-10	7770-010
		J00LM0	SOLID	100.0	725.2 g		04/18/03	2	R304119-11	7770-011
		J00LM1	SOLID	100.0	710.0 g		04/18/03	2	R304119-12	7770-012
		J00LM2	SOLID	100.0	813.8 g		04/18/03	2	R304119-13	7770-013
		J00LM3	SOLID	100.0	718.9 g		04/18/03	2	R304119-14	7770-014
		J00LM4	SOLID	100.0	949.9 g		04/18/03	2	R304119-15	7770-015
		J00LM5	SOLID	100.0	748.6 g		04/18/03	2	R304119-16	7770-016
		J00LM6	SOLID	100.0	654.5 g		04/18/03	2	R304119-17	7770-017
		J00LM7	SOLID	100.0	712.5 g		04/18/03	2	R304119-18	7770-018
		J00LM8	SOLID	100.0	800.1 g		04/18/03	2	R304119-19	7770-019
		J00LM9	SOLID	100.0	657.7 g		04/18/03	2	R304119-20	7770-020
		J00LN0	SOLID	100.0	824.3 g		04/18/03	2	R304119-21	7770-021
		J00LN1	SOLID	100.0	844.2 g		04/18/03	2	R304119-22	7770-022
		J00LN2	SOLID	100.0	821.0 g		04/18/03	2	R304119-23	7770-023
		J00LN3	SOLID	100.0	798.2 g		04/18/03	2	R304119-24	7770-024
		Method Blank	SOLID						R304119-25	7770-025

QC SUMMARY

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Lab id EBRLNE  
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford  
Contract No. 630  
Case no SDG H2167

TEST MATRIX	METHOD	PREPARATION ERROR			PLANCHETS ANALYZED			QUALIFIERS
		BATCH	2σ %	CLIENT MORE	RE BLANK	LCS DUP/ORIG	MS/ORIG	
Gamma Spectroscopy								
GAM	SOLID	Gamma Scan	6910-021	15.0	24		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 Hanford  
Version Ver 1.0  
Form DVD-PBS  
Version 3.06  
Report date 04/24/03

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7770  
 Contact Melissa C. Mannion

Client Hanford  
 Contract No. 630  
 Case no SDG H2167

**LAB WORK SUMMARY**

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX ANALYZED	REVIEWED	BY	METHOD
R304119-01 04/16/03 04/18/03	J00LL0 100-F-25 B00-029-273	B00-029	SOLID	7770-001	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-02 04/16/03 04/18/03	J00LL1 100-F-25 B00-029-273	B00-029	SOLID	7770-002	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-03 04/16/03 04/18/03	J00LL2 100-F-25 B00-029-273	B00-029	SOLID	7770-003	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-04 04/16/03 04/18/03	J00LL3 100-F-25 B00-029-273	B00-029	SOLID	7770-004	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-05 04/16/03 04/18/03	J00LL4 100-F-25 B00-029-273	B00-029	SOLID	7770-005	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-06 04/16/03 04/18/03	J00LL5 100-F-25 B00-029-273	B00-029	SOLID	7770-006	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-07 04/16/03 04/18/03	J00LL6 100-F-25 B00-029-273	B00-029	SOLID	7770-007	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-08 04/16/03 04/18/03	J00LL7 100-F-25 B00-029-273	B00-029	SOLID	7770-008	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-09 04/16/03 04/18/03	J00LL8 100-F-25 B00-029-273	B00-029	SOLID	7770-009	GAM	04/22/03	04/24/03	MCM	Gamma Scan
R304119-10 04/16/03 04/18/03	J00LL9 100-F-25 B00-029-273	B00-029	SOLID	7770-010	GAM	04/22/03	04/24/03	MCM	Gamma Scan

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LWS  
 Version 3.06  
 Report date 04/24/03

**EBERLINE SERVICES/RICHMOND**  
SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

**WORK SUMMARY, cont.**

Client Hanford  
Contract No. 630  
Case no SDG H2167

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R304119-11 04/16/03 04/18/03	J00LM0 100-F-25 B00-029-273	B00-029	SOLID	7770-011	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-12 04/16/03 04/18/03	J00LM1 100-F-25 B00-029-273	B00-029	SOLID	7770-012	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-13 04/16/03 04/18/03	J00LM2 100-F-25 B00-029-273	B00-029	SOLID	7770-013	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-14 04/16/03 04/18/03	J00LM3 100-F-25 B00-029-273	B00-029	SOLID	7770-014	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-15 04/16/03 04/18/03	J00LM4 100-F-25 B00-029-273	B00-029	SOLID	7770-015	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-16 04/16/03 04/18/03	J00LM5 100-F-25 B00-029-273	B00-029	SOLID	7770-016	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-17 04/16/03 04/18/03	J00LM6 100-F-25 B00-029-273	B00-029	SOLID	7770-017	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-18 04/16/03 04/18/03	J00LM7 100-F-25 B00-029-273	B00-029	SOLID	7770-018	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-19 04/16/03 04/18/03	J00LM8 100-F-25 B00-029-273	B00-029	SOLID	7770-019	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-20 04/16/03 04/18/03	J00LM9 100-F-25 B00-029-273	B00-029	SOLID	7770-020	GAM		04/22/03	04/24/03	MCM	Gamma Scan

WORK SUMMARY

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

**WORK SUMMARY, cont.**

Client Hanford  
Contract No. 630  
Case no SDG H2167

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R304119-21 04/16/03 04/18/03	J00LN0 100-F-25 B00-029-273	B00-029	SOLID	7770-021	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-22 04/16/03 04/18/03	J00LN1 100-F-25 B00-029-273	B00-029	SOLID	7770-022	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-23 04/16/03 04/18/03	J00LN2 100-F-25 B00-029-273	B00-029	SOLID	7770-023	GAM		04/22/03	04/24/03	MCM	Gamma Scan
R304119-24 04/16/03 04/18/03	J00LN3 100-F-25 B00-029-273	B00-029	SOLID	7770-024	GAM		04/23/03	04/24/03	MCM	Gamma Scan
R304119-25	Method Blank		SOLID	7770-025	GAM		04/23/03	04/24/03	MCM	Gamma Scan

COUNTS OF TESTS BY SAMPLE TYPE										
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	B00-029	Gamma Scan	GAMMA_GS	24			1			25
TOTALS				24			1			25

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-LWS  
Version 3.06  
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-025

Method Blank

**METHOD BLANK**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-25</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7770-025</u>	Material/Matrix _____	<u>SOLID</u>
	SAF No <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.055</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.10	U	GAM
Europium 152	14683-23-9	U		0.095	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.30		U	GAM

100 F Area - Quick Turn

QC-BLANK #44480
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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-001

J00LL0

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-01</u>	Client sample id <u>J00LL0</u>	
Dept sample id <u>7770-001</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:21</u>	<u>722.1 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.063</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.047	0.042	<u>0.055</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.18</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.55</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-002

J00LL1

**DATA SHEET**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-02</u>	Client sample id <u>J00LL1</u>	
Dept sample id <u>7770-002</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:25</u>	<u>755.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.060</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.103	0.059	0.056	0.10		GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Americium 241	14596-10-2	U		0.065		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-003

J00LL2

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-03</u>	Client sample id <u>J00LL2</u>	
Dept sample id <u>7770-003</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:27</u>	<u>690.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	0.074	0.041	0.049	0.10		GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.28		U	GAM

100 F Area - Quick Turn

DATA SHEETS

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-004

J00LL3

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG_H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-04</u>	Client sample id <u>J00LL3</u>	
Dept sample id <u>7770-004</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:23</u>	<u>854.1 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.081</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.086	0.051	0.058	0.10		GAM
Europium 152	14683-23-9	U		<u>0.18</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.22</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.16</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.24		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-005

J00LL4

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-05</u>	Client sample id <u>J00LL4</u>	
Dept sample id <u>7770-005</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:29</u>	<u>752.4 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.047	0.050	U	GAM
Cesium 137	10045-97-3	U		0.046	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.16		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-006

J00LL5

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-06</u>	Client sample id <u>J00LL5</u>	
Dept sample id <u>7770-006</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:31</u>	<u>661.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.074</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.063	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.22</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.21</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.57		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-007

J00LL6

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-07</u>	Client sample id <u>J00LL6</u>	
Dept sample id <u>7770-007</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:37</u>	<u>803.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.050	0.050	U	GAM
Cesium 137	10045-97-3	U		0.10	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.17</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.096	0.10	U	GAM
Americium 241	14596-10-2	U		0.062		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-008

J00LL7

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-08</u>	Client sample id <u>J00LL7</u>	
Dept sample id <u>7770-008</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:43</u>	<u>658.4 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.081</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.039</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.16</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.30</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-009

J00LL8

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-09</u>	Client sample id <u>J00LL8</u>	
Dept sample id <u>7770-009</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:41</u>	<u>783.1 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.12</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.088	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.20</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.34</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.19</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.28		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-010

J00LL9

**D A T A   S H E E T**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-10</u>	Client sample id <u>J00LL9</u>	
Dept sample id <u>7770-010</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:32</u>	<u>869.8 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.055</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.043	0.033	0.044	0.10	U	GAM
Europium 152	14683-23-9	0.254	0.081	<u>0.11</u>	0.10		GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.17		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-011

J00LM0

**D A T A   S H E E T**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-11</u>	Client sample id <u>J00LM0</u>	
Dept sample id <u>7770-011</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:37</u>	<u>725.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.071</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.062	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.16</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.21</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.60		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-012

J00LM1

**D A T A   S H E E T**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-12</u>	Client sample id <u>J00LM1</u>	
Dept sample id <u>7770-012</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:35</u>	<u>710.0 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.060</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.059	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.074		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-013

J00LM2

**D A T A   S H E E T**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-13</u>	Client sample id <u>J00LM2</u>	
Dept sample id <u>7770-013</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:33</u>	<u>813.8 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	U		0.039	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.28		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-014

J00LM3

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-14</u>	Client sample id <u>J00LM3</u>	
Dept sample id <u>7770-014</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:31</u>	<u>718.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.082</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.083</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.21</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.30</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.27</u>		U	GAM

100 F Area - Quick Turn

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-015

J00LM4

**D A T A   S H E E T**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-15</u>	Client sample id <u>J00LM4</u>	
Dept sample id <u>7770-015</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:35</u>	<u>949.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.10	U	GAM
Europium 152	14683-23-9	U		0.089	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-016

J00LM5

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-16</u>	Client sample id <u>J00LM5</u>	
Dept sample id <u>7770-016</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:29</u>	<u>748.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.071</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.11</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.16</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.23</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.19</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.58		U	GAM

100 F Area - Quick Turn

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-017

J00LM6

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-17</u>	Client sample id <u>J00LM6</u>	
Dept sample id <u>7770-017</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:28</u>	<u>654.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.069</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.049</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.076</u>		U	GAM

100 F Area - Quick Turn

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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-018

J00LM7

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-18</u>	Client sample id <u>J00LM7</u>	
Dept sample id <u>7770-018</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:30</u>	<u>712.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.047	0.050	U	GAM
Cesium 137	10045-97-3	U		0.040	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.29		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-019

J00LM8

**D A T A   S H E E T**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-19</u>	Client sample id <u>J00LM8</u>	
Dept sample id <u>7770-019</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:22</u>	<u>800.1 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.11</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.083	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.19</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.32</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.27		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-020

J00LM9

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	SDG <u>H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-20</u>	Client sample id <u>J00LM9</u>	
Dept sample id <u>7770-020</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:21</u>	<u>657.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.058</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.059</u>	0.10	U	GAM
Europium 152	14683-23-9	0.267	0.092	<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.18</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-021

J00LN0

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-21</u>	Client sample id <u>J00LN0</u>	
Dept sample id <u>7770-021</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:20</u>	<u>824.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.054</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.056</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.23</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.53</u>		U	GAM

100 F Area - Quick Turn

DATA SHEETS

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SUMMARY DATA SECTION

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H2167**

7770-022

J00LN1

**D A T A   S H E E T**

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG_H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-22</u>	Client sample id <u>J00LN1</u>	
Dept sample id <u>7770-022</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:26</u>	<u>844.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.061</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.077	0.049	0.062	0.10		GAM
Europium 152	14683-23-9	0.327	0.096	<u>0.13</u>	0.10		GAM
Europium 154	15585-10-1	U		<u>0.18</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.070		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-023

J00LN2

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R304119-23</u>	Client sample id <u>J00LN2</u>	
Dept sample id <u>7770-023</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:25</u>	<u>821.0 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.045	0.050	U	GAM
Cesium 137	10045-97-3	0.096	0.038	0.045	0.10		GAM
Europium 152	14683-23-9	0.233	0.088	<u>0.11</u>	0.10		GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.28		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H2167

7770-024

J00LN3

DATA SHEET

SDG <u>7770</u>	Client/Case no <u>Hanford</u>	<u>SDG H2167</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R304119-24</u>	Client sample id <u>J00LN3</u>	
Dept sample id <u>7770-024</u>	Location/Matrix <u>100-F-25</u>	<u>SOLID</u>
Received <u>04/18/03</u>	Collected/Weight <u>04/16/03 11:24</u>	<u>798.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-273</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.049	0.050	U	GAM
Cesium 137	10045-97-3	0.093	0.040	0.042	0.10		GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.29		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/24/03</u>

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

Test GAM Matrix SOLID  
 SDG 7770  
 Contact Melissa C. Mannion

**LAB METHOD SUMMARY**

GAMMA SCAN  
 GAMMA SPECTROSCOPY

Client Hanford  
 Contract No. 630  
 Contract SDG\_H2167

**RESULTS**

LAB            RAW    SUF-  
 SAMPLE ID    TEST FIX    PLANCHET    CLIENT SAMPLE ID            Cobalt 60    Cesium 137

Preparation batch 6910-021

R304119-01		7770-001	J00LL0		U	U
R304119-02		7770-002	J00LL1		U	0.103
R304119-03		7770-003	J00LL2		U	0.074
R304119-04		7770-004	J00LL3		U	0.086
R304119-05		7770-005	J00LL4		U	U
R304119-06		7770-006	J00LL5		U	U
R304119-07		7770-007	J00LL6		U	U
R304119-08		7770-008	J00LL7		U	U
R304119-09		7770-009	J00LL8		U	U
R304119-10		7770-010	J00LL9		U	U
R304119-11		7770-011	J00LM0		U	U
R304119-12		7770-012	J00LM1		U	U
R304119-13		7770-013	J00LM2		U	U
R304119-14		7770-014	J00LM3		U	U
R304119-15		7770-015	J00LM4		U	U
R304119-16		7770-016	J00LM5		U	U
R304119-17		7770-017	J00LM6		U	U
R304119-18		7770-018	J00LM7		U	U
R304119-19		7770-019	J00LM8		U	U
R304119-20		7770-020	J00LM9		U	U
R304119-21		7770-021	J00LN0		U	U
R304119-22		7770-022	J00LN1		U	0.077
R304119-23		7770-023	J00LN2		U	0.096
R304119-24		7770-024	J00LN3		U	0.093
R304119-25		7770-025	BLK (QC ID=44480)		U	U

Nominal values and limits from method            RDLs (pCi/g)            0.050            0.10  
 100 F Area - Quick Turn

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 04/24/03

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H2167

Test GAM Matrix SOLID  
 SDG 7770  
 Contact Melissa C. Mannion

**LAB METHOD SUMMARY**

GAMMA SCAN  
 GAMMA SPECTROSCOPY

Client Hanford  
 Contract No. 630  
 Contract SDG\_H2167

**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 6910-021      2σ prep error 15.0 %      Reference Lab Notebook 6910 pg. 21																	
R304119-01			J00LL0		<u>0.063</u>	722					<u>42</u>	6	04/21/03	04/22	MB,05,00		
R304119-02			J00LL1		<u>0.060</u>	756					<u>42</u>	6	04/21/03	04/22	MB,07,00		
R304119-03			J00LL2		<u>0.042</u>	691					<u>42</u>	6	04/21/03	04/22	MB,08,00		
R304119-04			J00LL3		<u>0.081</u>	854					<u>42</u>	6	04/21/03	04/22	02,03,00		
R304119-05			J00LL4		<u>0.047</u>	752					<u>42</u>	6	04/21/03	04/22	02,04,00		
R304119-06			J00LL5		<u>0.074</u>	662					<u>42</u>	6	04/21/03	04/22	MB,05,00		
R304119-07			J00LL6		<u>0.050</u>	803					<u>42</u>	6	04/21/03	04/22	MB,07,00		
R304119-08			J00LL7		<u>0.081</u>	658					<u>41</u>	6	04/21/03	04/22	MB,08,00		
R304119-09			J00LL8		<u>0.12</u>	783					<u>34</u>	6	04/21/03	04/22	02,03,00		
R304119-10			J00LL9		<u>0.055</u>	870					<u>34</u>	6	04/21/03	04/22	02,04,00		
R304119-11			J00LM0		<u>0.071</u>	725					<u>34</u>	6	04/21/03	04/22	MB,05,00		
R304119-12			J00LM1		<u>0.060</u>	710					<u>34</u>	6	04/21/03	04/22	MB,07,00		
R304119-13			J00LM2		<u>0.045</u>	814					<u>33</u>	6	04/21/03	04/22	MB,08,00		
R304119-14			J00LM3		<u>0.082</u>	719					<u>41</u>	6	04/21/03	04/22	02,03,00		
R304119-15			J00LM4		<u>0.040</u>	950					<u>41</u>	6	04/21/03	04/22	02,04,00		
R304119-16			J00LM5		<u>0.071</u>	749					<u>41</u>	6	04/21/03	04/22	MB,05,00		
R304119-17			J00LM6		<u>0.069</u>	654					<u>41</u>	6	04/21/03	04/22	MB,07,00		
R304119-18			J00LM7		<u>0.047</u>	713					<u>41</u>	6	04/21/03	04/22	MB,08,00		
R304119-19			J00LM8		<u>0.11</u>	800					<u>36</u>	6	04/21/03	04/22	02,03,00		
R304119-20			J00LM9		<u>0.058</u>	658					<u>36</u>	6	04/21/03	04/22	02,04,00		
R304119-21			J00LN0		<u>0.054</u>	824					<u>36</u>	6	04/21/03	04/22	MB,05,00		
R304119-22			J00LN1		<u>0.061</u>	844					<u>35</u>	6	04/21/03	04/22	MB,07,00		
R304119-23			J00LN2		<u>0.045</u>	821					<u>35</u>	6	04/21/03	04/22	MB,08,00		
R304119-24			J00LN3		<u>0.049</u>	798					<u>31</u>	7	04/21/03	04/23	MB,08,00		
R304119-25			BLK (QC ID=44480)		<u>0.055</u>	654					<u>31</u>		04/21/03	04/23	MB,05,00		
Nominal values and limits from method					0.050	654				100		180					

PROCEDURES    REFERENCE    GAMMA\_GS  
 CP-100        Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES ± 2 SD        MDA 0.064 ± 0.040  
 FOR 25 SAMPLES        YIELD \_\_\_\_\_ ± \_\_\_\_\_

Lab id EBRLNE  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 04/24/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2167

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.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE  
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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H2167

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.

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 04/24/03

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7770  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG\_H2167

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.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2167

SDG 7770  
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
 Contract No. 630  
 Case no SDG\_H2167

DATA SHEET

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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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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- \* 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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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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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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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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- \* 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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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.

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Collector Robert Fahberg / <b>NIELSON</b>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code Data Turnaround		
Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-25		<b>SDA 42167(7770)</b>		SAF No. B00-029		Air Quality <input type="checkbox"/> <b>7 DAY</b>		
Ice Chest No. <b>ERC 96 002</b>		Field Logbook No. EL-1571		<b>RF 4-14-03</b>		COA R10F242000		Method of Shipment Federal Express		
Shipped To <b>(TMA) RECRA</b>		Offsite Property No. <b>A030198</b>				Bill of Lading/Air Bill No. <b>SOE OSPC</b>				
POSSIBLE SAMPLE HAZARDS/REMARKS										
Special Handling and/or Storage					Preservation		None			
					Type of Container		Marinelli			
					No. of Container(s)		1			
					Volume		500mL			
SAMPLE ANALYSIS					See item (1) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time							
J00LL0	SOIL	4-16-03	1121	X						
J00LL1	SOIL	4-16-03	1125	X						
J00LL2	SOIL	4-16-03	1127	X						
J00LL3	SOIL	4-16-03	1123	X						
J00LL4	SOIL	4-16-03	1129	X						
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS					
Relinquished By/Removed From <b>Nielson</b>		Date/Time <b>4-16-03 1430</b>		Received By/Stored In <b>Ref # 3B</b>		Date/Time <b>4/16/03 1430</b>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <b>3B</b> on <b>4/17/03</b>		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <b>REF 3B</b>		Date/Time <b>4/17/03 0900</b>		Received By/Stored In <b>SJGALE</b>		Date/Time <b>4/17/03 0900</b>				
Relinquished By/Removed From <b>SJGALE</b>		Date/Time <b>4/17/03 0900</b>		Received By/Stored In <b>FED EX</b>		Date/Time				
Relinquished By/Removed From <b>FED CP</b>		Date/Time		Received By/Stored In <b>[Signature]</b>		Date/Time <b>1000 4-18-03</b>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION	Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time					

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Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-25 ( <i>SDG 42167</i> ) 7770		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7 DAY</i>					
Ice Chest No. <i>ERC 96 002</i>		Field Logbook No. EL-157 <i>R6 4-14-03</i>		COA R10F242000		Method of Shipment Federal Express					
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030198</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation	None						
Special Handling and/or Storage				Type of Container	Marinelli						
				No. of Container(s)	1						
				Volume	500mL						
SAMPLE ANALYSIS				See item (1) in Special Instructions.							
Sample No.	Matrix *	Sample Date	Sample Time								
<i>✓</i> JO0LL5	SOIL	<i>4-16-03</i>	<i>1131</i>	<i>X</i>							
<i>✓</i> JO0LL6	SOIL	<i>4-16-03</i>	<i>1137</i>	<i>X</i>							
<i>✓</i> JO0LL7	SOIL	<i>4-16-03</i>	<i>1143</i>	<i>X</i>							
<i>✓</i> JO0LL8	SOIL	<i>4-16-03</i>	<i>1141</i>	<i>X</i>							
<i>✓</i> JO0LL9	SOIL	<i>4-16-03</i>	<i>1132</i>	<i>X</i>							
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <i>R Nielson</i>		Date/Time <i>4-16-03 1430</i>		Received By/Stored In <i>REF # 3B</i>		Date/Time <i>4/16/03 1430</i>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>			S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF 3B</i>		Date/Time <i>41703 0900</i>		Received By/Stored In <i>SJGAL</i>		Date/Time <i>41703 0900</i>					
Relinquished By/Removed From <i>SJGAL</i>		Date/Time <i>41703 0900</i>		Received By/Stored In <i>FED EX</i>		Date/Time					
Relinquished By/Removed From <i>FED EX</i>		Date/Time		Received By/Stored In <i>Lin</i>		Date/Time <i>4-18-03 1000</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION	Received By	Title				Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time					

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Collector Robert Fahlberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code Data Turnaround														
Project Designation 100 F Area - Quick Turn		Sample Line Location 100-F-25		<i>SDA H2167 (7770)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7 DAY</i>														
Ice Chest No. <i>ERC 96 002</i>		Field Logbook No. <i>RC</i> EL-157 <i>2 4-14-03</i>		COA R10F242000		Method of Shipment Federal Express																
Shipped To (TMA)RECRA		Offsite Property No. <i>A030 198</i>				Bill of Lading/Air Bill No. <i>588 05PC</i>																
POSSIBLE SAMPLE HAZARDS/REMARKS					Preservation	None																
Special Handling and/or Storage					Type of Container	Marinelli																
					No. of Container(s)	1																
					Volume	500mL																
SAMPLE ANALYSIS					See item (1) in Special Instructions.																	
Sample No.	Matrix *	Sample Date	Sample Time																			
<i>J00LM0</i>	SOIL	<i>4-16-03</i>	<i>1137</i>	<i>Y</i>																		
<i>J00LM1</i>	SOIL	<i>4-16-03</i>	<i>1135</i>	<i>X</i>																		
<i>J00LM2</i>	SOIL	<i>4-16-03</i>	<i>1133</i>	<i>X</i>																		
<i>J00LM3</i>	SOIL	<i>4-16-03</i>	<i>1131</i>	<i>X</i>																		
<i>J00LM4</i>	SOIL	<i>4-16-03</i>	<i>1135</i>	<i>Y</i>																		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *										
Relinquished By/Removed From <i>R Nielson</i>		Date/Time <i>4-16-03</i>		Received By/Stored In <i>Ref # 3B</i>		Date/Time <i>4-16-03 1436</i>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4-17-03</i>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation X=Other										
Relinquished By/Removed From <i>REF 3B</i>		Date/Time <i>4-17-03 0900</i>		Received By/Stored In <i>SJ GALE</i>		Date/Time <i>4-17-03 0900</i>																
Relinquished By/Removed From <i>Stano</i>		Date/Time <i>4-17-03 0900</i>		Received By/Stored In <i>FED EX</i>		Date/Time																
Relinquished By/Removed From <i>Ref 3B</i>		Date/Time		Received By/Stored In <i>Ref 3B</i>		Date/Time <i>4-18-03 1000</i>																
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time																
LABORATORY SECTION	Received By	Title				Date/Time																
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time																

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-029-273		Page 4 of 5		
Collector Robert Fahlberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code Data Turnaround		
Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-25		<i>SDA 42067 (7770)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7 DAY</i>		
Ice Chest No. <i>ERC 96 002</i>		Field Logbook No. EL-157A <i>2 RE 4.1403</i>		COA R10F242000		Method of Shipment Federal Express				
Shipped To <del>MA</del> RECRA		Offsite Property No. <i>4030198</i>				Bill of Lading/Air Bill No. <i>SEB 08PC</i>				
POSSIBLE SAMPLE HAZARDS/REMARKS					Preservation	None				
Special Handling and/or Storage					Type of Container	Marinelli				
					No. of Container(s)	1				
					Volume	500mL				
SAMPLE ANALYSIS					See item (1) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time							
<input checked="" type="checkbox"/> J00LM5	SOIL	<i>4-16-03</i>	<i>1129</i>	<i>X</i>						
<input checked="" type="checkbox"/> J00LM6	SOIL	<i>4-16-03</i>	<i>1128</i>	<i>X</i>						
<input checked="" type="checkbox"/> J00LM7	SOIL	<i>4-16-03</i>	<i>1130</i>	<i>X</i>						
<input checked="" type="checkbox"/> J00LM8	SOIL	<i>4-16-03</i>	<i>1122</i>	<i>X</i>						
<input checked="" type="checkbox"/> J00LM9	SOIL	<i>4-16-03</i>	<i>1121</i>	<i>X</i>						
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <i>R. Nielson</i>		Date/Time <i>4/16/03</i>		Received By/Stored In <i>Ref # 3B</i>		Date/Time <i>4/16/03</i>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>3B</i> on <i>4/17/03</i>		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF 3B</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>SJ GALE</i>		Date/Time <i>4/17/03 0900</i>				
Relinquished By/Removed From <i>SDALE</i>		Date/Time <i>4/17/03 0900</i>		Received By/Stored In <i>FED EX</i>		Date/Time				
Relinquished By/Removed From <i>FED EX</i>		Date/Time		Received By/Stored In <i>Ref #</i>		Date/Time <i>4/18/03 (002)</i>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION	Received By	Title				Date/Time				
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time				

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B00-029-273		Page 5 of 5		
Collector Robert Fahlberg / <i>NIELSON</i>		Company Contact MT Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code Data Turnaround		
Project Designation 100 F Area - Quick Turn		Sampling Location 100-F-25 <i>SDA H2167 (7770)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7 DAY</i>				
Ice Chest No. <i>ERC 96 002</i>		Field Logbook No. EL-1572 <i>R-4/14/03</i>		COA R10F242000		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>80E 0SPC</i>		
Shipped To <del>TMA</del> /RECRA		Offsite Property No. <i>A030198</i>								
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		None				
Special Handling and/or Storage				Type of Container		Marinelli				
				No. of Container(s)		1				
				Volume		500mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.						
Sample No.		Matrix *	Sample Date	Sample Time						
<i>✓</i> JOOLN0		SOIL	<i>4-16-03</i>	<i>1120</i>	<i>X</i>					
<i>✓</i> JOOLN1		SOIL	<i>4-16-03</i>	<i>1126</i>	<i>X</i>					
<i>✓</i> JOOLN2		SOIL	<i>4-16-03</i>	<i>1125</i>	<i>X</i>					
<i>✓</i> JOOLN3		SOIL	<i>4-16-03</i>	<i>1124</i>	<i>X</i>					
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From <i>R. Nielson</i>		Date/Time <i>4-16-03</i>		Received By/Stored In <i>R. Nielson</i>		Date/Time <i>4-16-03</i>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Personnel not available to relinquish samples from the 3728 Ref # <i>33</i> on <i>4/17/03</i>		Se=Soil SB=Sediment SO=Solid St=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF JB</i>		Date/Time <i>4-17-03 0900</i>		Received By/Stored In <i>NOALE</i>		Date/Time <i>4-17-03 0900</i>				
Relinquished By/Removed From <i>NOALE</i>		Date/Time <i>4-17-03 0900</i>		Received By/Stored In <i>FED EX</i>		Date/Time				
Relinquished By/Removed From <i>PRO</i>		Date/Time		Received By/Stored In <i>PRO</i>		Date/Time <i>4-18-03 1000</i>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION	Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By				Date/Time			



# ANALYTICAL SERVICES GROUP

Richmond, CA Laboratory

## SAMPLE RECEIPT CHECKLIST

Client: BH Date/Time received 1000 4-18-03  
 CoC No. B00-029-273  
 Container I.D. No. GRC-96-002 Requested TAT (Days) 3 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: 24
7. Number of containers per sample: 1 (Or see CoC \_\_\_\_\_)
8. Paperwork agrees with samples? Yes  No [ ]
9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels
10. Samples are: In good condition  Leaking [ ] Broken Container [ ] Missing [ ]
11. Samples are: Preserved [ ] Not preserved  Preservative \_\_\_\_\_
12. Describe any anomalies: \_\_\_\_\_
13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_
14. Received by [Signature] Date: 4-18-03 Time: 1000

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Alpha Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Beta/Gamma Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_