



EBERLINE
SERVICES

0058668

October 21, 2002

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

RECEIVED
JAN 29 2003
EDMC



Reference: P.O. #630
Eberline Services IR2-10-018-7314, SDG H1845 – Supplemental Report
(R2-07-105-7314)

Dear Mr. Trent:

Enclosed is a supplemental data report for six water samples designated under SAF No. F02-009 received at Eberline Services on July 29, 2002. Fluor Hanford, Inc. requested the water samples in SDG H1845 be analyzed for Isotopic Plutonium on October 3, 2002 (e-mail attached).

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

1.0 GENERAL

Fluor Hanford, Inc. (FH) Sample Delivery Group H1845 was composed of six water samples designated under SAF No. F02-009 with a Project Designations of: ModuTank – Annual Sampling of Purgewater.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The Pu results were transmitted to FH via e-Fax on October 18, 2002. The electronic data deliverable (EDD) was transmitted to FH via e-Mail on October 21, 2002.

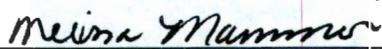
2.0 ANALYSIS NOTES

2.1 Isotopic Plutonium Analyses

Due to the high salt concentrations in the water samples, aliquots (0.05 L) had to be reduced in order to perform the Pu analysis. No other 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

10/21/02

Date





Stephen_J_Trent@RL.gov
10/03/2002 09:46
AM

To: mmannion@eberlineservices.com
cc: Doris_E_Ayres@rl.gov
Subject: Addition of Analysis

Melissa:

It appears we had a COC problem on SDG H1845; we forgot to include a request for Isotopic Pu analysis on these samples. Please have the laboratory perform isotopic Pu on all samples in SDG H1845. If possible, we would like to have a final data package on a 21 day turnaround or better; let me know what the lab can do...

Thanks for your help.

Steve Trent
Sample Management Project Coordinator
Fluor Hanford - Central Plateau Project
Ph: (509) 373-5869
EFax: (866) 252-5816
Site Pager: 85-7344

. E B E R L I N E S E R V I C E S / R I C H M O N D
S A M P L E D E L I V E R Y G R O U P H 1 8 4 5

SDG 7314
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H1845

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				
Sample Summaries	.	.	.	1
Prep Batch Summary	.	.	.	3
Work Summary	.	.	.	4
Method Blanks	.	.	.	6
Lab Control Samples	.	.	.	7
Duplicates	.	.	.	8
Data Sheets	.	.	.	9
Method Summaries	.	.	.	15
End of Section	.	.	.	16

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 10/21/02

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

SAMPLE SUMMARY

SDG 7314
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Case no SDG H1845

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B153FB	Purge. Storage & Treat.	WATER		R207105-06	F02-009	F02-009-001	07/25/02 06:50
B153F9	Purge. Storage & Treat.	WATER		R207105-01	F02-009	F02-009-001	07/25/02 08:55
B153H0	Purge. Storage & Treat.	WATER		R207105-02	F02-009	F02-009-001	07/25/02 09:20
B153H1	Purge. Storage & Treat.	WATER		R207105-03	F02-009	F02-009-001	07/25/02 09:50
B153H2	Purge. Storage & Treat.	WATER		R207105-04	F02-009	F02-009-001	07/25/02 10:25
B153H3	Purge. Storage & Treat.	WATER		R207105-05	F02-009	F02-009-001	07/25/02 10:55
Method Blank		WATER		R207105-12	F02-009		
Lab Control Sample		WATER		R207105-11	F02-009		
Duplicate (R207105-03)	Purge. Storage & Treat.	WATER		R207105-13	F02-009		07/25/02 09:50

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CS
 Version 3.06
 Report date 10/21/02

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

SDG 7314
 Contact Melissa C. Mannion

QC SUMMARY

Client Manford
 Contract No. 630
 Case no SDG H1845

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL SAMPLE ID	DEPARTMENT SAMPLE ID
7314	F02-009-001	B153F8	WATER		5.0 L		07/29/02 4	R207105-06	7314-006
		B153F9	WATER		5.0 L		07/29/02 4	R207105-01	7314-001
		B153H0	WATER		5.0 L		07/29/02 4	R207105-02	7314-002
		B153H1	WATER		5.0 L		07/29/02 4	R207105-03	7314-003
		B153H2	WATER		5.0 L		07/29/02 4	R207105-04	7314-004
		B153H3	WATER		5.0 L		07/29/02 4	R207105-05	7314-005
		Method Blank	WATER					R207105-12	7314-012
		Lab Control Sample	WATER					R207105-11	7314-011
		Duplicate (R207105-03)	WATER		5.0 L		07/29/02 4	R207105-13	7314-013

Lab id EBRLNE
 Protocol Manford
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 10/21/02

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

SDG 7314
 Contact Melissa C. Marnion

PREP BATCH SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG H1845

TEST MATRIX	METHOD	PREPARATION ERROR			PLANCHETS ANALYZED				QUALI- FIERS	
		BATCH	2σ %	CLIENT MORE	RE BLANK	LCS	DUP/ORIG	MS/ORIG		
Alpha Spectroscopy										
PU	WATER	Plutonium, Isotopic in Water	7036-178	5.0	6	1	1	1/1		

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

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-PBS
 Version 3.06
 Report date 10/21/02

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG H1845

CLIENT SAMPLE ID	LOCATION	MATRIX	LAB SAMPLE ID COLLECTED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
CUSTODY	SAF No		RECEIVED							
B153F8	Purge. Storage & Treat.	WATER	R207105-06	7314-006	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
F02-009-001	F02-009		07/25/02 07/29/02							
B153F9	Purge. Storage & Treat.	WATER	R207105-01	7314-001	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
F02-009-001	F02-009		07/25/02 07/29/02							
B153H0	Purge. Storage & Treat.	WATER	R207105-02	7314-002	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
F02-009-001	F02-009		07/25/02 07/29/02							
B153H1	Purge. Storage & Treat.	WATER	R207105-03	7314-003	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
F02-009-001	F02-009		07/25/02 07/29/02							
B153H2	Purge. Storage & Treat.	WATER	R207105-04	7314-004	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
F02-009-001	F02-009		07/25/02 07/29/02							
B153H3	Purge. Storage & Treat.	WATER	R207105-05	7314-005	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
F02-009-001	F02-009		07/25/02 07/29/02							
Method Blank		WATER	R207105-12	7314-012	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
	F02-009									
Lab Control Sample		WATER	R207105-11	7314-011	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
	F02-009									
Duplicate (R207105-03)	Purge. Storage & Treat.	WATER	R207105-13	7314-013	PU		10/16/02	10/18/02	MCM	Plutonium, Isotopic in Water
	F02-009		07/25/02 07/29/02							

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 10/21/02

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

SDG 7314
 Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
 Contract No. 630
 Case no SDG H1845

COUNTS OF TESTS BY SAMPLE TYPE											
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
PU	F02-009	Plutonium, Isotopic in Water	PUISO_PLATE_AEA	6			1	1	1		9
TOTALS				6			1	1	1		9

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CWS
 Version 3.06
 Report date 10/21/02

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-12

Method Blank

METHOD BLANK

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R207105-12</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7314-012</u>	Material/Matrix <u>WATER</u>	
	SAF No <u>F02-009</u>	

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Plutonium 238	13981-16-3	0	0.50	<u>1.9</u>	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.50	<u>1.9</u>	1.0	U	PU

ModuTank-Annual Sampl. of Purgewater

QC-BLANK 42923

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>10/21/02</u>

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-11

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Case no <u>No. 630</u>	
Lab sample id <u>R207105-11</u>	Client sample id <u>Lab Control Sample</u>	
Dept sample id <u>7314-011</u>	Material/Matrix <u>WATER</u>	
	SAF No <u>F02-009</u>	

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Plutonium 238	220	22	<u>1.9</u>	1.0		PU	244	9.8	90	84-116	80-120
Plutonium 239/240	260	25	<u>1.9</u>	1.0		PU	264	11	98	83-117	80-120

ModuTank-Annual Sampl. of Purgewater

QC-LCS 42922

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>10/21/02</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

R207105-13

B153H1

DUPLICATE

SDG <u>7314</u> Contact <u>Melissa C. Mannion</u> DUPLICATE Lab sample id <u>R207105-13</u> Dept sample id <u>7314-013</u>	ORIGINAL Lab sample id <u>R207105-03</u> Dept sample id <u>7314-003</u> Received <u>07/29/02</u>	Client/Case no <u>Hanford</u> SDG <u>H1845</u> Case no <u>No. 630</u> Client sample id <u>B153H1</u> Location/Matrix <u>Purge, Storage & Treat. WATER</u> Collected/Volume <u>07/25/02 09:50 5.0 L</u> Custody/SAF No <u>F02-009-001 F02-009</u>
--	---	---

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	PROT LIMIT
Plutonium 238	0	0.49	<u>1.9</u>	1.0	U	PU	0	0.51	<u>2.0</u>	U	-		
Plutonium 239/240	0	0.49	<u>1.9</u>	1.0	U	PU	0	0.51	<u>1.9</u>	U	-		

ModuTank-Annual Sampl. of Purgewater

QC-DUP#3 42924

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-06

B153F8

DATA SHEET

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R207105-06</u>	Client sample id <u>B153F8</u>	
Dept sample id <u>7314-006</u>	Location/Matrix <u>Purge. Storage & Treat. WATER</u>	
Received <u>07/29/02</u>	Collected/Volume <u>07/25/02 06:50 5.0 L</u>	
	Custody/SAF No <u>F02-009-001 F02-009</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST
Plutonium 238	13981-16-3	0	0.56	<u>2.1</u>	1.0	U	PU
Plutonium 239/240	PU-239/240	0.278	0.56	<u>2.1</u>	1.0	U	PU

ModuTank-Annual Sampl. of Purgewater

DATA SHEETS
 Page 1
SUMMARY DATA SECTION
 Page 9

Lab id <u>EBRINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>10/21/02</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-01

B153F9

D A T A S H E E T

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R207105-01</u>	Client sample id <u>B153F9</u>	
Dept sample id <u>7314-001</u>	Location/Matrix <u>Purge, Storage & Treat. WATER</u>	
Received <u>07/29/02</u>	Collected/Volume <u>07/25/02 08:55 5.0 L</u>	
	Custody/SAF No <u>F02-009-001 F02-009</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Plutonium 238	13981-16-3	0	0.50	<u>1.9</u>	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.50	<u>1.9</u>	1.0	U	PU

ModuTank-Annual Sampl. of Purgewater

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>10/21/02</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-02

B153H0

DATA SHEET

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R207105-02</u>	Client sample id <u>B153H0</u>	
Dept sample id <u>7314-002</u>	Location/Matrix <u>Purge, Storage & Treat. WATER</u>	
Received <u>07/29/02</u>	Collected/Volume <u>07/25/02 09:20</u> <u>5.0 L</u>	
	Custody/SAF No <u>F02-009-001</u> <u>F02-009</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Plutonium 238	13981-16-3	-0.360	0.72	<u>2.8</u>	1.0	U	PU
Plutonium 239/240	PU-239/240	0.719	0.72	<u>2.8</u>	1.0	U	PU

ModuTank-Annual Sampl. of Purgewater

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>10/21/02</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-03

B153H1

DATA SHEET

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R207105-03</u>	Client sample id <u>B153H1</u>	
Dept sample id <u>7314-003</u>	Location/Matrix <u>Purge. Storage & Treat. WATER</u>	
Received <u>07/29/02</u>	Collected/Volume <u>07/25/02 09:50 5.0 L</u>	
	Custody/SAF No <u>F02-009-001 F02-009</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Plutonium 238	13981-16-3	0	0.51	<u>2.0</u>	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.51	<u>1.9</u>	1.0	U	PU

ModuTank-Annual Sampl. of Purgewater

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>10/21/02</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-04

B153H2

DATA SHEET

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R207105-04</u>	Client sample id <u>B153H2</u>	
Dept sample id <u>7314-004</u>	Location/Matrix <u>Purge, Storage & Treat. WATER</u>	
Received <u>07/29/02</u>	Collected/Volume <u>07/25/02 10:25 5.0 L</u>	
	Custody/SAF No <u>F02-009-001 F02-009</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Plutonium 238	13981-16-3	0	0.56	<u>2.1</u>	1.0	U	PU
Plutonium 239/240	PU-239/240	0.280	0.56	<u>2.1</u>	1.0	U	PU

ModuTank-Annual Sampl. of Purgewater

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>10/21/02</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H1845

R207105-05

B153H3

DATA SHEET

SDG <u>7314</u>	Client/Case no <u>Hanford</u>	SDG <u>H1845</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R207105-05</u>	Client sample id <u>B153H3</u>	
Dept sample id <u>7314-005</u>	Location/Matrix <u>Purge, Storage & Treat. WATER</u>	
Received <u>07/29/02</u>	Collected/Volume <u>07/25/02 10:55 5.0 L</u>	
	Custody/SAF No <u>F02-009-001 F02-009</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Plutonium 238	13981-16-3	0	0.54	<u>2.1</u>	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.54	<u>2.1</u>	1.0	U	PU

ModuTank-Annual Sampl. of Purgewater

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.05</u>
Report date <u>10/21/02</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

Test PU Matrix WATER
SDG 7314
Contact Melissa C. Mannion

METHOD SUMMARY
PLUTONIUM, ISOTOPIc IN WATER
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H1845

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Plutonium 238	Plutonium 239/240
Preparation batch 7036-178						
B153F8	R207105-06			7314-006	U	U
B153F9	R207105-01			7314-001	U	U
B153H0	R207105-02			7314-002	U	U
B153H1	R207105-03			7314-003	U	U
B153H2	R207105-04			7314-004	U	U
B153H3	R207105-05			7314-005	U	U
BLK (QC ID=42923)	R207105-12			7314-012	U	U
LCS (QC ID=42922)	R207105-11			7314-011	ok	ok
Duplicate (R207105-03)	R207105-13			7314-013	- U	- U
Nominal values and limits from method				ROIs (pCi/L)	1.0	1.0
ModuTank-Annual Sampl. of Purgewater						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MAX pCi/L	MDA	ALIQ L	PREP FAC	DILU TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7036-178 2σ prep error 5.0 % Reference Lab Notebook 7036 pg. 178																
B153F8	R207105-06			2.1		0.0500			73		114			83	10/16/02	10/16 SS-050
B153F9	R207105-01			1.9		0.0500			88		114			83	10/16/02	10/16 SS-015
B153H0	R207105-02			2.8		0.0500			58		113			83	10/16/02	10/16 SS-043
B153H1	R207105-03			2.0		0.0500			80		114			83	10/16/02	10/16 SS-044
B153H2	R207105-04			2.1		0.0500			77		114			83	10/16/02	10/16 SS-047
B153H3	R207105-05			2.1		0.0500			79		114			83	10/16/02	10/16 SS-048
BLK (QC ID=42923)	R207105-12			1.9		0.0500			84		115				10/16/02	10/16 SS-065
LCS (QC ID=42922)	R207105-11			1.9		0.0500			83		115				10/16/02	10/16 SS-064
Duplicate (R207105-03)	R207105-13			1.9		0.0500			86		115			83	10/16/02	10/16 SS-066
(QC ID=42924)																
Nominal values and limits from method				1.0	0.0500			20-105	100	100	180					

Lab id EBRLINE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 10/21/02

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1845

Test PU Matrix WATER
SDG 7314
Contact Melissa C. Marnion

METHOD SUMMARY, cont.

PLUTONIUM, ISOTOPIC IN WATER
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H1845

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	CP-040	Environmental Water Dissolution, rev 5
	CP-940	Plutonium Separation and Purification, rev 4
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD	NDA	<u>2.1</u>	±	<u>0.57</u>
FOR 9 SAMPLES	YIELD	<u>79</u>	±	<u>18</u>

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 10/21/02

FHE Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F02-009-001 Page 2 of 2			
Collector GA Thomas, MA Baehler		Company Contact CS Wright		Telephone No. 373-3994		Project Coordinator TRENT, SJ			
Price Code 7N		Data Turnaround 45 Days		Project Designation MegaTank - Annual Sampling of Purgewater		Sampling Location Purgewater Storage and Treatment Facility H1845 (7314)			
Air Quality <input type="checkbox"/>		SAF No. F02-009		Ice Chest No. SEEOSPC		Field Logbook No. HNF-A-314 1			
Method of Shipment Federal Express		COA 117546ES10		Bill of Lading/Air Bill No. SEEOSPC		Method of Shipment SDA H1845			
Shipped To EBERLINE SERVICES (Formerly TMA)		Office Property No. R070226		R070226		R070226			
POSSIBLE SAMPLE HAZARDS/REMARKS **Historical Data indicates that samples are less than 2000 µCi/g total activity and therefore do not require a RCF read screen for off-site shipment. Special Handling and/or Storage Cool 4°C				Preservation Cool 4°C		Cool 4°C			
				Type of Container 20L		20L		20L	
				No. of Container(s) 3		2		1	
				Volume 20mL		1000mL		1000mL	
SAMPLE ANALYSIS				VOA - 1200A (TCL)		Semi-VOA - 1270A (TCL)			
				Pesticides - 1061; Herbicides - 1130A		EP Metals - 1064 (TAL); Mercury - 1470 (CV); Inorganic Phosphorus		Tribrom - H3	
Sample No.		Matrix *		Sample Date		Sample Time			
11845		WATER		7/25/02		1055			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS					
Relinquished By/Removed From GA Thomas, MA Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02		Matrix * P-Poll SD-Sediment SL-Solid W-Water O-Oil A-Air DG-Dioxin/Dibenzofuran DL-Dioxin/Liquid T-Tissue W-Wipe L-Liquid V-Vegetation X-Other					
Relinquished By/Removed From R. G. Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02							
Relinquished By/Removed From R. G. Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02							
Relinquished By/Removed From R. G. Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02							
Relinquished By/Removed From R. G. Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02							
Relinquished By/Removed From R. G. Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02							
Relinquished By/Removed From R. G. Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02							
Relinquished By/Removed From R. G. Baehler 7/25/02		Received By/Strand In R. G. Baehler 7/25/02		Date/Time					
LABORATORY SECTION		Received By		Title					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By					

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F02-009-001		Page 1 of 2		
Collector GA Thomas, MA Buchler		Company Contact CS Wright		Telephone No. 373-3994		Project Coordinator TRENT, SJ		Price Code 7N Date Turnaround 45 Days		
Project Description ModeTank - Annual Sampling of Purgewater		Sampling Location Purgewater Storage and Treatment Facility		H1845 (7314)		SAF No. F02-009		Air Quality <input type="checkbox"/>		
Ice Chest No. SEE OSPC		Field Labbook No. HNF-N-344 1		COA 117546ES10		Method of Shipment Federal Express SDG H1845				
Shipped To EBERLINE SERVICES (Formerly TMA)		Offsite Property No. R020226		75723-01		Bill of Lading/Air Bill No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS **Historical Data indicates that samples are less than 2000 pCVg total activity and therefore do not require a RCF rad screen for off-site shipment. Special Handling and/or Storage			Preservation	Cool 4C	Cool 4C	HNO3 to pH <	None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <
			Type of Container	nG ⁺	nG	nG	nG	P	P	P
			No. of Container(s)	3	2	4	1	1	1	1
			Volume	20mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS			VOA - 828A (TCL)	Semi-VOA - 8278A (TCL)	Pesticides - 8081; Herbicides - 8158A	ICP Metals - 6018A (TAL); Mercury - 789 - (CV); Manganese	Trifluoride - HJ	Aminoacids-241	Organic Alpha; Gross Beta	Strontium-89,90 - Yield Sr
Sample No.	Matrix *	Sample Date	Sample Time							
B18978	WATER	7/25/02	0650 ^h							
B18979	WATER	AT 7/25/02								
E15310	WATER	AT 7/25/02								
B16244	WATER	AT 7/25/02								
B15342	WATER	AT 7/25/02								
CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time		Matrix * S-Soil SS-Sediment SQ-Solid SW-Water W-Water O-Oil A-Air DP-Dust/Soil DL-Dust/Liquid T-Tissue W-Wipe L-Liquid V-Vegetation X-Other		
GA Thomas, MA Buchler		7/25/02 0710		ERC		7/25/02				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen		7/25/02 0710		R. Allen		7/25/02				
Relinquished By/Received From		Date/Time		Received By/Stored In		Date/Time				
R. Allen										

FH-Central Plateau Project		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F02-009-001		Page 1 of 2																																	
Collector GA Thomas, MA Bechler		Company Contact CS Wright		Telephone No. 373-3994		Project Coordinator TRENT, SJ		Price Code 7N Data Turnaround 45 Days																																	
Project Description Main Tank - Annual Sampling of Purgewater		Sampling Location Purgewater Storage and Treatment Facility		H1845 (7314)		SAF No. F02-009		Air Quality <input type="checkbox"/>																																	
Ice Chest No. SFE0SPC		Field Logbook No. HNF-N-314 1		COA 1175462S10		Method of Shipment Federal Express		SOG H1845																																	
Shipment To EBERLINE SERVICES (Formerly TMA)		Office Property No. 1057-12-02 A020185		Bill of Lading/Air Bill No. SFE R 0SPC																																					
POSSIBLE SAMPLE HAZARDS/REMARKS **Historical Data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RCF rad screen for off-site shipment. Special Handling and/or Storage Cool 4°C			<table border="1"> <thead> <tr> <th>Preservation</th> <th>COOL 4C</th> <th>COOL 4C</th> <th>ENCO to pH <</th> <th>None</th> <th>ENCO to pH <</th> <th>ENCO to pH <</th> <th>ENCO to pH <</th> </tr> </thead> <tbody> <tr> <td>Type of Container</td> <td>uG</td> <td>uG</td> <td>uG</td> <td>P</td> <td>P</td> <td>P</td> <td>P</td> </tr> <tr> <td>No. of Container(s)</td> <td>3</td> <td>2</td> <td>1</td> <td>1</td> <td>1</td> <td>2</td> <td>1</td> </tr> <tr> <td>Volume</td> <td>20mL</td> <td>1000mL</td> <td>1000mL</td> <td>300mL</td> <td>1000mL</td> <td>1000mL</td> <td>1000mL</td> </tr> </tbody> </table>							Preservation	COOL 4C	COOL 4C	ENCO to pH <	None	ENCO to pH <	ENCO to pH <	ENCO to pH <	Type of Container	uG	uG	uG	P	P	P	P	No. of Container(s)	3	2	1	1	1	2	1	Volume	20mL	1000mL	1000mL	300mL	1000mL	1000mL	1000mL
Preservation	COOL 4C	COOL 4C	ENCO to pH <	None	ENCO to pH <	ENCO to pH <	ENCO to pH <																																		
Type of Container	uG	uG	uG	P	P	P	P																																		
No. of Container(s)	3	2	1	1	1	2	1																																		
Volume	20mL	1000mL	1000mL	300mL	1000mL	1000mL	1000mL																																		
SAMPLE ANALYSIS			VOA - ETOA (TCL)	Semi-VOA - ETOA (TCL)	Pesticides - 001; Herbicides - 0190A	PF Metals - 001A (TAL); Mercury - 1470 - 001; Inorganic Phosphorus	Tributyl - H3	Arsenic - 341	Great Aqueous Basin	Residuals - 89,90 - Total R																															
Sample No.	Matrix *	Sample Date	Sample Time																																						
B4530	WATER	7/25/02																																							
B4531	WATER	7/25/02	0855			X	X	X	X																																
B4534	WATER	7/25/02	0920			X	X	X	X																																
B4534	WATER	7/25/02	0950			X	X	X	X																																
B45342	WATER	7/25/02	1025			X	X	X	X																																
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS					Matrix * S-Soil SL-Sediment SO-Solid SW-Water W-Water O-OS A-Air DS-Dust Settler DL-Dam Leach T-Thru SF-Slip L-Liquid V-Vegetation X-Other																															
Relinquished By/Removed From Greg Thomas Ed. Heston 7/25/02		Date/Time 12:00		Received By/Stored In R. Fullin R. Fullin 7.25.02		Date/Time 12:00																																			
Relinquished By/Removed From R. G. Adams 7-25-02		Date/Time 14:00		Received By/Stored In FedEx		Date/Time 7:20:00																																			
Relinquished By/Removed From R. G. Adams 7-25-02		Date/Time 12:00		Received By/Stored In R. A. 3-A 9728 7-26-02		Date/Time 12:00																																			
Relinquished By/Removed From R. A. 3-A 9728 7-26-02		Date/Time 09:00		Received By/Stored In R. Fullin R. Fullin 7-26-02		Date/Time 09:00																																			
Relinquished By/Removed From R. G. Adams 7-26-02		Date/Time 12:50		Received By/Stored In FedEx 7-27-02		Date/Time -																																			
Relinquished By/Removed From FedEx 7-27-02		Date/Time 12:50		Received By/Stored In E. Mastas E. Mastas 7/29/02		Date/Time 10:00																																			
LABORATORY SECTION		Received By		Title		Date/Time																																			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time																																			

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: Bechtel Hamford Inc. Date/Time received 7-27-02 12:00

CoC No. F02-009-001

Container I.D. No. ERC 99-062 and ERC 96-044 Requested TAT (Days) 45 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: 6

7. Number of containers per sample: PLS check (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. Describe any anomalies: _____

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

14. Received by E. Maestas Date: 7-29-02 Time: 10:00

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 _____

Survey Meter Ser. No. _____ Calibration date _____