



EBERLINE SERVICES

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May 1, 2008

Ms. Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99352

Reference: **P.O. #S00W235A00**
Eberline Services R8-04-143-7804, SDG K1193



Dear Ms. Kessner:

Enclosed is the data report for two liquid (other liquid) samples designated under SAF No. RC-012, received at Eberline Services on April 25, 2008. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

For **Melissa C. Mannion**
Senior Program Manager

NJV

Enclosure: *Data Package*

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1193 was composed of two liquid (other liquid) samples designated under SAF No. RC-012 with a Project Designation of: 100-N Ancillary Facilities & 190-DR Waste Characterization.

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 WCH via e-mail on May 1, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

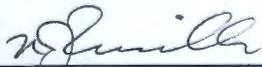
No problems were encountered during the course of the analyses.

2.2 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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



Melissa C. Mannion
Senior Program Manager

05/01/08

Date

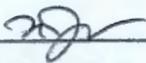
EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K1193

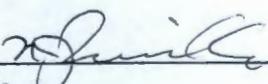
SDG 7804
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG_K1193

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Prepared by _____


Reviewed by _____

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Version 3.06
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SAMPLE DELIVERY GROUP K1193

SDG 7804
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1193

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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SDG 7804
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
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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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SAMPLE DELIVERY GROUP K1193

SDG 7804

Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford

Contract No. S00W235A00

Case no SDG K1193

LAB						CHAIN OF	
SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CUSTODY	COLLECTED
R804143-01	J16HY0	1330-N WastePad2ndEvent	LIQUID		RC-012	RC-012-018	04/17/08 17:00
R804143-02	J16HY1	1330-N WastePad2ndEvent	LIQUID		RC-012	RC-012-018	04/17/08 15:50
R804143-03	Lab Control Sample		LIQUID		RC-012		
R804143-04	Method Blank		LIQUID		RC-012		
R804143-05	Duplicate (R804143-01)	1330-N WastePad2ndEvent	LIQUID		RC-012		04/17/08 17:00

LAB SUMMARY

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Lab id EBRLNE

Protocol Hanford

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1193

SDG 7804

Contact Melissa C. Mannion

QC SUMMARY

Client Hanford

Contract No. S00W235A00

Case no SDG K1193

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
7804	RC-012-018	J16HY0	LIQUID		203 mL		04/25/08	8	R804143-01	7804-001
		J16HY1	LIQUID		174 mL		04/25/08	8	R804143-02	7804-002
		Method Blank	LIQUID						R804143-04	7804-004
		Lab Control Sample	LIQUID						R804143-03	7804-003
		Duplicate (R804143-01)	LIQUID		203 mL		04/25/08	8	R804143-05	7804-005

QC SUMMARY

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Protocol Hanford

Version Ver 1.0

Form DVD-QS

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1193

SDG 7804
 Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
 Contract No. S00W235A00
 Case no SDG K1193

TEST	MATRIX	METHOD	PREPARATION ERROR			PLANCHETS ANALYZED			QUALI-
			BATCH	2σ %	CLIENT MORE	RE BLANK	LCS	DUP/ORIG MS/ORIG	
Gas Proportional Counting									
93A	LIQUID	Gross Alpha in Liquid	6148-096	20.6	2	1	1	1/1	
Gamma Spectroscopy									
GAM	LIQUID	Gamma Scan in Liquid	6148-096	7.0	2	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.

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SAMPLE DELIVERY GROUP K1193

SDG 7804

Contact Melissa C. Mannion

Client Hanford

Contract No. S00W235A00

Case no SDG K1193

LAB WORK SUMMARY

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX	SUF-							
RECEIVED	CUSTODY	SAF No	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
804143-01	J16HY0		7804-001	93A/93		04/29/08	04/30/08	BW	Gross Alpha in Liquid	
04/17/08	1330-N WastePad2ndEvent	LIQUID	7804-001	93B/93		04/29/08	04/30/08	BW	Gross Beta in Liquid	
04/25/08	RC-012-018	RC-012	7804-001	GAM		04/30/08	05/01/08	CSS	Gamma Scan in Liquid	
804143-02	J16HY1		7804-002	93A/93		04/29/08	04/30/08	BW	Gross Alpha in Liquid	
04/17/08	1330-N WastePad2ndEvent	LIQUID	7804-002	93B/93		04/29/08	04/30/08	BW	Gross Beta in Liquid	
04/25/08	RC-012-018	RC-012	7804-002	GAM		04/30/08	05/01/08	CSS	Gamma Scan in Liquid	
804143-03	Lab Control Sample		7804-003	93A/93		04/29/08	04/30/08	BW	Gross Alpha in Liquid	
		LIQUID	7804-003	93B/93		04/29/08	04/30/08	BW	Gross Beta in Liquid	
		RC-012	7804-003	GAM		04/30/08	05/01/08	CSS	Gamma Scan in Liquid	
804143-04	Method Blank		7804-004	93A/93		04/29/08	04/30/08	BW	Gross Alpha in Liquid	
		LIQUID	7804-004	93B/93		04/29/08	04/30/08	BW	Gross Beta in Liquid	
		RC-012	7804-004	GAM		04/30/08	05/01/08	CSS	Gamma Scan in Liquid	
804143-05	Duplicate (R804143-01)		7804-005	93A/93		04/29/08	04/30/08	BW	Gross Alpha in Liquid	
04/17/08	1330-N WastePad2ndEvent	LIQUID	7804-005	93B/93		04/29/08	04/30/08	BW	Gross Beta in Liquid	
04/25/08		RC-012	7804-005	GAM		04/30/08	05/01/08	CSS	Gamma Scan in Liquid	

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-012	Gross Alpha in Liquid	900.0_ALPHABETA_GPC	2			1	1	1	5
93B/93	RC-012	Gross Beta in Liquid	900.0_ALPHABETA_GPC	2			1	1	1	5
GAM	RC-012	Gamma Scan in Liquid	GAMMA_GS	2			1	1	1	5
TOTALS				6			3	3	3	15

WORK SUMMARY

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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K1193

7804-004

Method Blank

METHOD BLANK

<u>SDG 7804</u>	<u>Client/Case no Hanford</u>	<u>SDG K1193</u>
<u>Contact Melissa C. Mannion</u>	<u>Contract No. S00W235A00</u>	
<u>Lab sample id R804143-04</u>	<u>Client sample id Method Blank</u>	
<u>Dept sample id 7804-004</u>	<u>Material/Matrix</u>	<u>LIQUID</u>
	<u>SAF No RC-012</u>	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	0.037	0.10	0.209	10.0	U	93A
Gross Beta	12587-47-2	0.001	0.15	0.264	15.0	U	93B
Potassium 40	13966-00-2	U		0.637		U	GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.050	U	GAM
Radium 226	13982-63-3	U		0.064	0.100	U	GAM
Radium 228	15262-20-1	U		0.171	0.200	U	GAM
Europium 152	14683-23-9	U		0.093	0.100	U	GAM
Europium 154	15585-10-1	U		0.067	0.100	U	GAM
Europium 155	14391-16-3	U		0.087	0.100	U	GAM
Thorium 228	14274-82-9	U		0.059		U	GAM
Thorium 232	TH-232	U		0.171		U	GAM
Uranium 235	15117-96-1	U		0.132		U	GAM
Uranium 238	U-238	U		3.43		U	GAM
Americium 241	14596-10-2	U		0.074		U	GAM

100N Anclyr Felts & 190DR Wst Chrtza

QC-BLANK #65500

METHOD BLANKS

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SAMPLE DELIVERY GROUP K1193

7804-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7804</u> Contact <u>Melissa C. Mannion</u> Lab sample id <u>R804143-03</u> Dept sample id <u>7804-003</u>	Client/Case no <u>Hanford</u> SDG <u>K1193</u> Contract No. <u>S00W235A00</u> Client sample id <u>Lab Control Sample</u> Material/Matrix <u>LIQUID</u> SAF No <u>RC-012</u>
-------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	3σ LMITS	PROTOCOL
	pCi/mL	(COUNT)	pCi/mL	pCi/mL	FIERS TEST	pCi/mL	pCi/mL	%	(TOTAL)	LIMITS
Gross Alpha	7.05	0.96	0.316	10.0	93A	5.60	0.22	126	53-147	70-130
Gross Beta	5.54	0.41	0.320	15.0	93B	5.60	0.22	99	79-121	70-130
Cobalt 60	2.60	0.16	<u>0.112</u>	0.050	GAM	2.55	0.10	102	85-115	80-120
Cesium 137	2.39	0.13	<u>0.109</u>	0.050	GAM	2.82	0.11	<u>85</u>	87-113	80-120

100N Anclyr Fclts & 190DR Wst Chrtza

QC-LCS #65499

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
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Version <u>3.06</u>
Report date <u>05/01/08</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1193

7804-005

J16HY0

DUPLICATE

SDG <u>7804</u> Contact <u>Melissa C. Mannion</u> DUPLICATE Lab sample id <u>R804143-05</u> Dept sample id <u>7804-005</u>	ORIGINAL Lab sample id <u>R804143-01</u> Dept sample id <u>7804-001</u> Received <u>04/25/08</u>	Client/Case no <u>Hanford</u> <u>SDG K1193</u> Contract No. <u>S00W235A00</u> Client sample id <u>J16HY0</u> Location/Matrix <u>1330-N WastePad2ndEvent</u> <u>LIQUID</u> Collected/Volume <u>04/17/08 17:00</u> <u>203 mL</u> Custody/SAF No <u>RC-012-018</u> <u>RC-012</u>
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ANALYTE	DUPLICATE		MDA		RDL		QUALI-		ORIGINAL		MDA		QUALI-		RPD	3σ	DER
	pCi/mL	2σ ERR (COUNT)	pCi/mL		pCi/mL		FIERS	TEST	pCi/mL	2σ ERR (COUNT)	pCi/mL		FIERS	%			
Gross Alpha	-0.019	0.028	0.091		10.0		U	93A	0.012	0.047	0.095		U	-		1.1	
Gross Beta	0.108	0.16	0.269		15.0		U	93B	-0.016	0.17	0.295		U	-		1.1	
Potassium 40	U		1.43				U	GAM	U		0.561		U	-		1.1	
Cobalt 60	U		<u>0.051</u>		0.050		U	GAM	U		<u>0.055</u>		U	-		0.1	
Cesium 137	U		<u>0.053</u>		0.050		U	GAM	U		0.046		U	-		0.2	
Radium 226	U		<u>0.120</u>		0.100		U	GAM	U		<u>0.110</u>		U	-		0.1	
Radium 228	U		<u>0.252</u>		0.200		U	GAM	U		<u>0.218</u>		U	-		0.2	
Europium 152	U		<u>0.154</u>		0.100		U	GAM	U		<u>0.134</u>		U	-		0.2	
Europium 154	U		<u>0.167</u>		0.100		U	GAM	U		<u>0.152</u>		U	-		0.1	
Europium 155	U		<u>0.115</u>		0.100		U	GAM	U		0.098		U	-		0.2	
Thorium 228	U		0.221				U	GAM	U		0.084		U	-		1.2	
Thorium 232	U		0.252				U	GAM	U		0.218		U	-		0.2	
Uranium 235	U		0.212				U	GAM	U		0.176		U	-		0.3	
Uranium 238	U		6.03				U	GAM	U		6.39		U	-		0.1	
Americium 241	U		0.101				U	GAM	U		0.053		U	-		0.8	

100N Anclyr Fclts & 190DR Wst Chrtza

QC-DUP#1 65501

DUPLICATES

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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K1193

7804-001

J16HY0

DATA SHEET

SDG <u>7804</u>	Client/Case no <u>Hanford</u>	SDG <u>K1193</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>S00W235A00</u>	
Lab sample id <u>R804143-01</u>	Client sample id <u>J16HY0</u>	
Dept sample id <u>7804-001</u>	Location/Matrix <u>1330-N WastePad2ndEvent LIQUID</u>	
Received <u>04/25/08</u>	Collected/Volume <u>04/17/08 17:00 203 mL</u>	
	Custody/SAF No <u>RC-012-018 RC-012</u>	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	0.012	0.047	0.095	10.0	U	93A
Gross Beta	12587-47-2	-0.016	0.17	0.295	15.0	U	93B
Potassium 40	13966-00-2	U		0.561		U	GAM
Cobalt 60	10198-40-0	U		0.055	0.050	U	GAM
Cesium 137	10045-97-3	U		0.046	0.050	U	GAM
Radium 226	13982-63-3	U		0.110	0.100	U	GAM
Radium 228	15262-20-1	U		0.218	0.200	U	GAM
Europium 152	14683-23-9	U		0.134	0.100	U	GAM
Europium 154	15585-10-1	U		0.152	0.100	U	GAM
Europium 155	14391-16-3	U		0.098	0.100	U	GAM
Thorium 228	14274-82-9	U		0.084		U	GAM
Thorium 232	TH-232	U		0.218		U	GAM
Uranium 235	15117-96-1	U		0.176		U	GAM
Uranium 238	U-238	U		6.39		U	GAM
Americium 241	14596-10-2	U		0.053		U	GAM

100N Anclry Fclts & 190DR Wst Chrtza

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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K1193

7804-002

J16HY1

DATA SHEET

SDG <u>7804</u>	Client/Case no <u>Hanford</u>	SDG <u>K1193</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>S00W235A00</u>	
Lab sample id <u>R804143-02</u>	Client sample id <u>J16HY1</u>	
Dept sample id <u>7804-002</u>	Location/Matrix <u>1330-N WastePad2ndEvent LIQUID</u>	
Received <u>04/25/08</u>	Collected/Volume <u>04/17/08 15:50 174 mL</u>	
	Custody/SAF No <u>RC-012-018 RC-012</u>	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	-0.005	0.045	0.104	10.0	U	93A
Gross Beta	12587-47-2	-0.034	0.15	0.258	15.0	U	93B
Potassium 40	13966-00-2	U		1.66		U	GAM
Cobalt 60	10198-40-0	U		<u>0.067</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.067</u>	0.050	U	GAM
Radium 226	13982-63-3	U		<u>0.142</u>	0.100	U	GAM
Radium 228	15262-20-1	U		<u>0.307</u>	0.200	U	GAM
Europium 152	14683-23-9	U		<u>0.158</u>	0.100	U	GAM
Europium 154	15585-10-1	U		<u>0.195</u>	0.100	U	GAM
Europium 155	14391-16-3	U		<u>0.133</u>	0.100	U	GAM
Thorium 228	14274-82-9	U		0.097		U	GAM
Thorium 232	TH-232	U		0.307		U	GAM
Uranium 235	15117-96-1	U		0.212		U	GAM
Uranium 238	U-238	U		7.21		U	GAM
Americium 241	14596-10-2	U		0.108		U	GAM

100N Anclyr Fclts & 190DR Wst Chrtza

DATA SHEETS

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SAMPLE DELIVERY GROUP K1193

Test 93A Matrix LIQUID
 SDG 7804
 Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID
 GAS PROPORTIONAL COUNTING

Client Hanford
 Contract No. S00W235A00
 Contract SDG K1193

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 6148-096				
804143-01	93	7804-001	J16HY0	U
804143-02	93	7804-002	J16HY1	U
804143-03	93	7804-003	Lab Control Sample	ok
804143-04	93	7804-004	Method Blank	U
804143-05	93	7804-005	Duplicate (R804143-01)	- U

Nominal values and limits from method RDLs (pCi/mL) 10.0
 .00N Anclry Felts & 190DR Wet Chrtza

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/mL	mL	FAC	TION	mg	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 6148-096 2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 90															
804143-01	93	J16HY0	0.095	2.00			<u>0</u>		100			12	04/29/08	04/29	GRB-105
804143-02	93	J16HY1	0.104	2.00			<u>0</u>		100			12	04/29/08	04/29	GRB-109
804143-03	93	Lab Control Sample	0.316	2.00			60		100				04/29/08	04/29	GRB-110
804143-04	93	Method Blank	0.209	2.00			60		100				04/29/08	04/29	GRB-111
804143-05	93	Duplicate (R804143-01)	0.091	2.00			<u>0</u>		100			12	04/29/08	04/29	GRB-112

Nominal values and limits from method 10.0 2.00 5-250 100 180

PROCEDURES REFERENCE 900.0_ALPHABETA_GPC
 SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 5
 SPP-120 Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD MDA 0.163 ± 0.197
 FOR 5 SAMPLES RESIDUE 24 ± 66

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 Form DVD-LMS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1193

LAB METHOD SUMMARY

GROSS BETA IN LIQUID

GAS PROPORTIONAL COUNTING

Test 93B Matrix LIQUID
SDG 7804
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Contract SDG K1193

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 6148-096				
804143-01	93	7804-001	J16HY0	U
804143-02	93	7804-002	J16HY1	U
804143-03	93	7804-003	Lab Control Sample	ok
804143-04	93	7804-004	Method Blank	U
804143-05	93	7804-005	Duplicate (R804143-01)	- U

nominal values and limits from method RDLs (pCi/mL) 15.0
100N Anclry Fclts & 190DR Wst Chrtza

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	RESID	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/mL	mL	FAC	TION	mg	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 6148-096 2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 90															
804143-01	93	J16HY0	0.295	2.00			0		100			12	04/29/08	04/29	GRB-105
804143-02	93	J16HY1	0.258	2.00			0		100			12	04/29/08	04/29	GRB-109
804143-03	93	Lab Control Sample	0.320	2.00			60		100				04/29/08	04/29	GRB-110
804143-04	93	Method Blank	0.264	2.00			60		100				04/29/08	04/29	GRB-111
804143-05	93	Duplicate (R804143-01)	0.269	2.00			0		100			12	04/29/08	04/29	GRB-112

nominal values and limits from method 15.0 2.00 5-250 100 180

PROCEDURES REFERENCE 900.0_ALPHABETA_GPC
SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 5
SPP-120 Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD MDA 0.281 ± 0.052
FOR 5 SAMPLES RESIDUE 24 ± 66

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Test GAM Matrix LIQUID
 SDG 7804
 Contact Melissa C. Mannion

Client Hanford
 Contract No. S00W235A00
 Contract SDG K1193

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID
 GAMMA SPECTROSCOPY

RESULTS

LAB	RAW	SUF-				
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137	
Preparation batch 6148-096						
804143-01		7804-001	J16HY0	U	U	
804143-02		7804-002	J16HY1	U	U	
804143-03		7804-003	Lab Control Sample	ok	<u>LOW</u>	
804143-04		7804-004	Method Blank	U	U	
804143-05		7804-005	Duplicate (R804143-01)	- U	- U	

nominal values and limits from method RDLs (pCi/mL) 0.050 0.050
 .00N Anclyr Fclts & 190DR Wst Chrtza

METHOD PERFORMANCE

LAB	RAW	SUF-		MAX MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/mL	mL	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 6148-096 2σ prep error 7.0 % Reference Lab Notebook #6148, pg. 90																
804143-01		J16HY0		<u>0.055</u>	106					444			13	04/29/08	04/30	JR,01,00
804143-02		J16HY1		<u>0.067</u>	107					444			13	04/29/08	04/30	JR,04,00
804143-03		Lab Control Sample		<u>0.112</u>	100					444				04/29/08	04/30	JR,06,00
804143-04		Method Blank		0.028	100					844				04/29/08	04/30	JR,02,00
804143-05		Duplicate (R804143-01)		<u>0.053</u>	106					844			13	04/29/08	04/30	JR,04,00

nominal values and limits from method 0.050 100 100 180

PROCEDURES REFERENCE GAMMA_GS
 SPP-100 Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD MDA 0.063 ± 0.062
 FOR 5 SAMPLES YIELD _____ ± _____

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SDG 7804
Contact Melissa C. Mannion

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Client Hanford
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SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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SDG 7804
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PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

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

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WORK SUMMARY

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

The following notes apply to this report:

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

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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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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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LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:

1. The error of RESULT, including that introduced by rounding the result prior to printing.

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

2. The error of ADDED.

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

- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

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DUPLICATE

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

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

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

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

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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

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

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

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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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Case no SDG K1193

METHOD SUMMARY

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.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/01/08

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-012-018		Page 2 of 2				
Collector Edmundson/Isom/Perry		Company Contact Tom Edmundson		Telephone No. 376-4058		Project Coordinator KESSNER, JH		Price Code 95		Data Turnaround 15 Days 7 4-17-08 TRE			
Project Designation 100-N Ancillary Facilities & 190-DR Waste Characterization		Sampling Location 1330-N Waste Pad 2nd Event		SAF No. RC-012		Method of Shipment Fed Ex							
Ice Chest No. Haz Mat Box		Field Logbook No. EL-1516-12		COA RD4MXX2F00		Bill of Lading/Air Bill No. See OSPC <i>TRR</i> <i>AS 4/23/08</i>							
Shipped To EBERLINE SERVICES/LIONVILLE		Offsite Property No. <i>HMSR# 7984-2619-4256</i>											
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Potential Rad</i>		Preservation		Cool 4C	Cool 4C	None	None	None	Cool 4C				
Special Handling and/or Storage <i>Cool to 4c</i>		Type of Container		aG	aG	G/P	G/P	G/P	Gs*				
		No. of Container(s)		1	1	1	1	1	1				
		Volume		1000mL	200mL	500mL <i>125mL</i>	500mL <i>125mL</i>	1000mL <i>125mL</i>	60mL				
SAMPLE ANALYSIS		PCBs - 8082		TOX - 9020	Gross Alpha	Gross Beta	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (Ethylene glycol)					
		<i>TRE 4-17-08</i>					*	<i>TRE 4-17-08</i>					
Sample No.	Matrix *	Sample Date	Sample Time										
J16HY1	OTHER LIQUID	4-17-08	1550			✓	✓	✓					
J18HY2	OTHER LIQUID	4-17-08	1600			✓	✓	✓			<i>4/23/08</i>		
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS					Matrix *		
Relinquished By/Removed From <i>T.R. Edmundson</i> <i>JR Silander</i>		Date/Time 4-17-08 1820		Received By/Stored In <i>1060 Butelle #1C</i>		Date/Time 4-17-08 1820		<p>(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}</p> <p>* Gamma Spec. container is being used as shipping screen. Re-join with this set w/screen prior to shipment to Eberline. TRE 4-17-08</p> <p>Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.</p>					<p>Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Issue WI=Wipe L=Liquid V=Vegetation N=Other</p>
Relinquished By/Removed From <i>1060/IC</i>		Date/Time 4/23/08 0900		Received By/Stored In <i>MSTankouch</i>		Date/Time 4/23/08 0900							
Relinquished By/Removed From <i>wch</i> <i>MITE</i>		Date/Time 4/23/08 1500		Received By/Stored In <i>FQR EX</i>		Date/Time 4/23/08 1500							
Relinquished By/Removed From <i>FQR EX</i>		Date/Time 4/24/08 17:00		Received By/Stored In <i>FQR EX</i>		Date/Time 4/24/08 17:00							
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			

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-012-018		Page 1 of 2			
Collector Edmundson/Isom/Perry		Company Contact Tom Edmundson		Telephone No. 376-4058		Project Coordinator KESSNER, JH		Price Code 95		Data Turnaround 15 Days 7 4-17-08 TRE		
Project Designation 100-N Ancillary Facilities & 190-DR Waste Characterization		Sampling Location 1330-N Waste Pad 2nd Event		SAF No. RC-012								
Ice Chest No. Haz Mat Box		Field Logbook No. EL-1516-12		COA RD4MXX2F00		Method of Shipment Fed Ex						
Shipped To EBERTLINE SERVICES/DIONVILLE		Offsite Property No. HMSR # 7984-2619-4256		Bill of Lading/Air Bill No. See OSMC HMSR Ex 3 4/24/08								
POSSIBLE SAMPLE HAZARDS/REMARKS Potential Rad			Preservation		Cool 4C	Cool 4C	None	None	None	Cool 4C		
			Type of Container		aG	aGs*	G/P	G/P	G/P	Gs*		
			No. of Container(s)		1	1	1	0	1	1		
			Volume		1000mL	200mL	500mL 125ml	500mL 125ml	1000mL	60mL		
Special Handling and/or Storage Cool to 4c												
SAMPLE ANALYSIS			ICs - 8082	OX - 9020	Gross Alpha	Gross Beta	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (Ethylene glycol)				
Sample No.	Matrix *	Sample Date	Sample Time									
J16HX6	OTHER LIQUID											
J16HX7	OTHER LIQUID											
J16HX8	OTHER LIQUID											
J16HX9	OTHER LIQUID											
J16HY0	OTHER LIQUID	4-17-08	1545			✓	✓	✓				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *
Relinquished By/Removed From TR Edmundson 4-17-08 1820		Date/Time		Received By/Stored In 1060 Battelle #1C 4-17-08 1820		Date/Time		(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) * Gamma Spec. container is being used as shipping screen. Re-join with this set w/screen prior to shipment to Eberline. TRE 4-17-08 Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.				Se=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 1060/1C 4/23/08 0900		Date/Time		Received By/Stored In MCTA mstankouch 4/23/08 0900		Date/Time						
Relinquished By/Removed From WCH 4/23/08 1500		Date/Time		Received By/Stored In MCTA mstankouch 4/23/08 1500		Date/Time						
Relinquished By/Removed From Fed Ex		Date/Time		Received By/Stored In Fed Ex 04/24/08 17:00		Date/Time						
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					

MS 4/23/08



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City PUCLAND State WA

Date/Time received 04/24/08 17:00 CoC No. PC-012-018

Container I.D. No. HAZMAT BOX Requested TAT (Days) 7 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: 2 Sample Matrix OTHER LIQUID
7. Number of containers per sample: 2 (Or see CoC _____)
8. Samples are in correct container Yes [] No []
9. Paperwork agrees with samples? Yes [] No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
12. Samples are: Preserved [] Not preserved [] pH _____ Preservative _____
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
15. Inspected by MF Date: 04/25/08 Time: 08:00

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
2 SAMPLES	<60						

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. 100482 Calibration date 09/21/07