0078935

SAF-RC-088
618-7 Burial Ground – Other Liquids
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 10/16/08 Initials/Date
Kathy Wendt	H4-21	KW 10/16/08 Initials/Date

COMMENTS:

SDG K1327 **SAF-RC-088**

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
OCT 2 2 2008
EDMC

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

September 18, 2008

RECEIVED
SEP 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-09-093-7892, SDG K1327

Dear Ms. Kessner:

Enclosed is the data report for one liquid (other liquid) sample designated under SAF No. RC-088 received at Eberline Services on September 11, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1327 was composed of one liquid (other liquid) sample designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Ground-Other.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on September 18, 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 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 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 Mannion

Melissa C. Mannion
Senior Program Manager

09/19/08

Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1327

SDG	7892
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG K1327

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	8
Lab Control Samples	9
Duplicates	10
Data Sheets	12
Method Summaries	13
Report Guides	21
End of Section	35

Prepared by

Melissa Mannion

Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

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 K1327

LAB SAMPLE SUMMARY

SDG 7892
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R809093-01	J17HM8	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-086	09/05/08 15:00
R809093-02	Lab Control Sample		LIQUID		RC-088		
R809093-03	Method Blank		LIQUID		RC-088		
R809093-04	Duplicate (R809093-01)	618-7 Burial Grnd(drums)	LIQUID		RC-088		09/05/08 15:00

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7892
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7892	RC-088-086	J17HM8	LIQUID		520 mL		09/11/08	6	R809093-01	7892-001
		Method Blank	LIQUID						R809093-03	7892-003
		Lab Control Sample	LIQUID						R809093-02	7892-002
		Duplicate (R809093-01)	LIQUID		520 mL		09/11/08	6	R809093-04	7892-004

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7892
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	LIQUID	Americium 241 in Liquid	6160-149	8.0	1			1	1	1/1		
PU	LIQUID	Plutonium-238,239/240, Liquid	6160-149	8.0	1			1	1	1/1		
TH	LIQUID	Thorium, Isotopic in Liquid	6160-149	8.0	1			1	1	1/1		
U	LIQUID	Uranium in Liquid	6160-149	8.0	1			1	1	1/1		
Beta Counting												
SR	LIQUID	Total Strontium in Liquids	6160-149	10.4	1			1	1	1/1		
Gas Proportional Counting												
93A	LIQUID	Gross Alpha in Liquid	6160-149	20.6	1			1	1	1/1		
93B	LIQUID	Gross Beta in Liquid	6160-149	11.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	LIQUID	Gamma Scan in Liquid	6160-149	7.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7892
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R809093-01	J17HM8			7892-001	93A/93		09/16/08	09/18/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7892-001	93B/93		09/16/08	09/18/08	BW	Gross Beta in Liquid
09/11/08	RC-088-086	RC-088		7892-001	AM		09/17/08	09/18/08	BW	Americium 241 in Liquid
				7892-001	GAM		09/15/08	09/18/08	CSS	Gamma Scan in Liquid
				7892-001	PU		09/18/08	09/18/08	BW	Plutonium-238,239/240, Liquid
				7892-001	SR		09/15/08	09/18/08	BW	Total Strontium in Liquids
				7892-001	TH		09/17/08	09/18/08	BW	Thorium, Isotopic in Liquid
				7892-001	U		09/16/08	09/17/08	BW	Uranium in Liquid
R809093-02	Lab Control Sample			7892-002	93A/93		09/16/08	09/18/08	BW	Gross Alpha in Liquid
			LIQUID	7892-002	93B/93		09/16/08	09/18/08	BW	Gross Beta in Liquid
		RC-088		7892-002	AM		09/17/08	09/18/08	BW	Americium 241 in Liquid
				7892-002	GAM		09/15/08	09/18/08	CSS	Gamma Scan in Liquid
				7892-002	PU		09/18/08	09/18/08	BW	Plutonium-238,239/240, Liquid
				7892-002	SR		09/15/08	09/18/08	BW	Total Strontium in Liquids
				7892-002	TH		09/17/08	09/18/08	BW	Thorium, Isotopic in Liquid
				7892-002	U		09/16/08	09/17/08	BW	Uranium in Liquid
R809093-03	Method Blank			7892-003	93A/93		09/17/08	09/18/08	BW	Gross Alpha in Liquid
			LIQUID	7892-003	93B/93		09/17/08	09/18/08	BW	Gross Beta in Liquid
		RC-088		7892-003	AM		09/17/08	09/18/08	BW	Americium 241 in Liquid
				7892-003	GAM		09/17/08	09/18/08	CSS	Gamma Scan in Liquid
				7892-003	PU		09/18/08	09/18/08	BW	Plutonium-238,239/240, Liquid
				7892-003	SR		09/15/08	09/18/08	BW	Total Strontium in Liquids
				7892-003	TH		09/17/08	09/18/08	BW	Thorium, Isotopic in Liquid
				7892-003	U		09/16/08	09/17/08	BW	Uranium in Liquid
R809093-04	Duplicate (R809093-01)			7892-004	93A/93		09/18/08	09/18/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7892-004	93B/93		09/18/08	09/18/08	BW	Gross Beta in Liquid
09/11/08		RC-088		7892-004	AM		09/17/08	09/18/08	BW	Americium 241 in Liquid
				7892-004	GAM		09/17/08	09/18/08	CSS	Gamma Scan in Liquid
				7892-004	PU		09/18/08	09/18/08	BW	Plutonium-238,239/240, Liquid
				7892-004	SR		09/15/08	09/18/08	BW	Total Strontium in Liquids
				7892-004	TH		09/17/08	09/18/08	BW	Thorium, Isotopic in Liquid
				7892-004	U		09/16/08	09/17/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7892
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Liquid	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-088	Gross Beta in Liquid	900.0_ALPHABETA_GPC	1			1	1	1	4
AM	RC-088	Americium 241 in Liquid	AMCMISO_IE_PLATE_AEA	1			1	1	1	4
GAM	RC-088	Gamma Scan in Liquid	GAMMA_GS	1			1	1	1	4
PU	RC-088	Plutonium-238,239/240, Liquid	PUISO_PLATE_AEA	1			1	1	1	4
SR	RC-088	Total Strontium in Liquids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TH	RC-088	Thorium, Isotopic in Liquid	THISO_IE_PLATE_AEA	1			1	1	1	4
U	RC-088	Uranium in Liquid	UISO_PLATE_AEA	1			1	1	1	4
TOTALS				8			8	8	8	32

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7892-003 Method Blank

METHOD BLANK

SDG	7892	Client/Case no	Hanford	SDG K1327	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R809093-03	Client sample id	Method Blank		
Dept sample id	7892-003	Material/Matrix		LIQUID	
		SAF No	RC-088		

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.177	4.2	8.57	10.0	U	93A
Gross Beta	12587-47-2	1.68	5.1	8.88	15.0	U	93B
Total Strontium	SR-RAD	0.052	0.13	0.253	1.00	U	SR
Americium 241	14596-10-2	0.073	0.090	0.142	1.00	U	AM
Thorium 228	14274-82-9	0	0.084	0.148	1.00	U	TH
Thorium 230	14269-63-7	-0.060	0.072	0.125	1.00	U	TH
Thorium 232	TH-232	0	0.036	0.073	1.00	U	TH
Uranium 233/234	U-233/234	0	0.028	0.109	1.00	U	U
Uranium 235	15117-96-1	0	0.034	0.132	1.00	U	U
Uranium 238	U-238	0.043	0.057	0.109	1.00	U	U
Plutonium 238	13981-16-3	0	0.084	0.200	1.00	U	PU
Plutonium 239/240	PU-239/240	0.042	0.042	0.160	1.00	U	PU
Potassium 40	13966-00-2	U		0.869		U	GAM
Cobalt 60	10198-40-0	U		0.053	0.050	U	GAM
Cesium 137	10045-97-3	U		0.040	0.050	U	GAM
Radium 226	13982-63-3	U		0.089	0.100	U	GAM
Radium 228	15262-20-1	U		0.176	0.200	U	GAM
Europium 152	14683-23-9	U		0.115	0.100	U	GAM
Europium 154	15585-10-1	U		0.099	0.100	U	GAM
Europium 155	14391-16-3	U		0.107	0.100	U	GAM
Thorium 228	14274-82-9	U		0.083		U	GAM
Thorium 232	TH-232	U		0.176		U	GAM
Uranium 235	15117-96-1	U		0.185		U	GAM
Uranium 238	U-238	U		4.87		U	GAM
Americium 241	14596-10-2	U		0.101		U	GAM

618-7 Burial Ground-Other

QC-BLANK #67283

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7892-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7892

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1327

Contract No. S00W235A00

Lab sample id R809093-02

Dept sample id 7892-002

Client sample id Lab Control Sample

Material/Matrix LIQUID

SAF No RC-088

ANALYTE	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ADDED pCi/mL	2σ ERR pCi/mL	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	119	18	6.78	10.0		93A	102	4.1	117	55-145	70-130
Gross Beta	99.7	7.9	6.66	15.0		93B	92.6	3.7	108	77-123	70-130
Total Strontium	9.53	0.58	0.267	1.00		SR	9.26	0.37	103	80-120	80-120
Americium 241	21.9	1.0	0.141	1.00		AM	20.4	0.82	107	84-116	80-120
Thorium 230	34.5	3.0	0.199	1.00		TH	37.8	1.5	91	83-117	80-120
Uranium 233/234	16.6	1.3	0.598	1.00		U	18.6	0.74	89	84-116	80-120
Uranium 235	13.8	1.2	0.108	1.00		U	15.1	0.60	91	83-117	80-120
Uranium 238	17.4	1.3	0.572	1.00		U	20.2	0.81	86	85-115	80-120
Plutonium 238	21.9	1.9	0.288	1.00		PU	23.4	0.94	94	82-118	80-120
Plutonium 239/240	26.3	2.2	0.153	1.00		PU	26.4	1.1	100	82-118	80-120
Cobalt 60	2.17	0.13	0.074	0.050		GAM	2.08	0.083	104	84-116	80-120
Cesium 137	2.64	0.13	0.091	0.050		GAM	2.32	0.093	114	84-116	80-120

618-7 Burial Ground-Other

QC-LCS #67282

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7892-004 J17HM8

DUPLICATE

SDG	7892	Client/Case no	Hanford SDG K1327
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R809093-04	Lab sample id	R809093-01
Dept sample id	7892-004	Dept sample id	7892-001
		Received	09/11/08
Client sample id	J17HM8		
Location/Matrix	618-7 Burial Grnd(drums) LIQUID		
Collected/Volume	09/05/08 15:00 520 mL		
Custody/SAF No	RC-088-086 RC-088		

ANALYTE	DUPLICATE pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ORIGINAL pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	2.44	2.1	2.94	10.0	U	93A	0.347	1.1	2.02	U	-		1.7
Gross Beta	1.59	4.9	8.40	15.0	U	93B	0.938	5.1	8.38	U	-		0.2
Total Strontium	-0.027	0.12	0.257	1.00	U	SR	-0.035	0.14	0.277	U	-		0.1
Americium 241	0.065	0.090	0.136	1.00	U	AM	-0.049	0.086	0.168	U	-		1.8
Thorium 228	-0.019	0.093	0.165	1.00	U	TH	0.107	0.16	0.328	U	-		1.4
Thorium 230	-0.074	0.046	0.085	1.00	U	TH	-0.027	0.16	0.255	U	-		0.6
Thorium 232	-0.014	0.019	0.044	1.00	U	TH	-0.027	0.053	0.204	U	-		0.5
Uranium 233/234	0.115	0.069	0.088	1.00		U	0.095	0.076	0.073		19	148	0.4
Uranium 235	0.028	0.028	0.107	1.00	U	U	0.057	0.046	0.088	U	-		1.1
Uranium 238	0.104	0.069	0.088	1.00		U	0.057	0.057	0.073	U	58	168	1.0
Plutonium 238	0.043	0.13	0.267	1.00	U	PU	-0.141	0.21	0.507	U	-		1.5
Plutonium 239/240	-0.022	0.043	0.166	1.00	U	PU	0	0.070	0.270	U	-		0.5
Potassium 40	U		0.495		U	GAM	U		0.521	U	-		0.1
Cobalt 60	U		0.046	0.050	U	GAM	U		0.053	U	-		0.2
Cesium 137	U		0.048	0.050	U	GAM	U		0.053	U	-		0.1
Radium 226	U		0.097	0.100	U	GAM	U		0.097	U	-		0
Radium 228	U		0.200	0.200	U	GAM	U		0.172	U	-		0.2
Europium 152	U		0.117	0.100	U	GAM	U		0.133	U	-		0.2
Europium 154	U		0.145	0.100	U	GAM	U		0.135	U	-		0.1
Europium 155	U		0.089	0.100	U	GAM	U		0.084	U	-		0.1
Thorium 228	U		0.077		U	GAM	U		0.067	U	-		0.2
Thorium 232	U		0.200		U	GAM	U		0.172	U	-		0.2
Uranium 235	U		0.164		U	GAM	U		0.157	U	-		0.1
Uranium 238	U		5.76		U	GAM	U		5.03	U	-		0.2
Americium 241	U		0.041		U	GAM	U		0.053	U	-		0.4

618-7 Burial Ground-Other

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7892-004 J17HM8

DUPLICATE, cont.

SDG	7892			Client/Case no	Hanford SDG K1327
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R809093-04	Lab sample id	R809093-01	Client sample id	J17HM8
Dept sample id	7892-004	Dept sample id	7892-001	Location/Matrix	618-7 Burial Grnd(drums) LIQUID
		Received	09/11/08	Collected/Volume	09/05/08 15:00 520 mL
				Custody/SAF No	RC-088-086 RC-088

QC-DUP#1 67284

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7892-001 J17HM8

DATA SHEET

SDG	7892	Client/Case no	Hanford	SDG K1327	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R809093-01	Client sample id	J17HM8		
Dept sample id	7892-001	Location/Matrix	618-7 Burial Grnd(drums)	LIQUID	
Received	09/11/08	Collected/Volume	09/05/08 15:00	520 mL	
		Custody/SAF No	RC-088-086	RC-088	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.347	1.1	2.02	10.0	U	93A
Gross Beta	12587-47-2	0.938	5.1	8.38	15.0	U	93B
Total Strontium	SR-RAD	-0.035	0.14	0.277	1.00	U	SR
Americium 241	14596-10-2	-0.049	0.086	0.168	1.00	U	AM
Thorium 228	14274-82-9	0.107	0.16	0.328	1.00	U	TH
Thorium 230	14269-63-7	-0.027	0.16	0.255	1.00	U	TH
Thorium 232	TH-232	-0.027	0.053	0.204	1.00	U	TH
Uranium 233/234	U-233/234	0.095	0.076	0.073	1.00		U
Uranium 235	15117-96-1	0.057	0.046	0.088	1.00	U	U
Uranium 238	U-238	0.057	0.057	0.073	1.00	U	U
Plutonium 238	13981-16-3	-0.141	0.21	0.507	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.070	0.270	1.00	U	PU
Potassium 40	13966-00-2	U		0.521		U	GAM
Cobalt 60	10198-40-0	U		0.053	0.050	U	GAM
Cesium 137	10045-97-3	U		0.053	0.050	U	GAM
Radium 226	13982-63-3	U		0.097	0.100	U	GAM
Radium 228	15262-20-1	U		0.172	0.200	U	GAM
Europium 152	14683-23-9	U		0.133	0.100	U	GAM
Europium 154	15585-10-1	U		0.135	0.100	U	GAM
Europium 155	14391-16-3	U		0.084	0.100	U	GAM
Thorium 228	14274-82-9	U		0.067		U	GAM
Thorium 232	TH-232	U		0.172		U	GAM
Uranium 235	15117-96-1	U		0.157		U	GAM
Uranium 238	U-238	U		5.03		U	GAM
Americium 241	14596-10-2	U		0.053		U	GAM

618-7 Burial Ground-Other

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test AM Matrix LIQUID
SDG 7892
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN LIQUID
ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
Preparation batch 6160-149						
R809093-01			7892-001	J17HM8	U	
R809093-02			7892-002	Lab Control Sample	ok	
R809093-03			7892-003	Method Blank	U	
R809093-04			7892-004	Duplicate (R809093-01)	-	U

Nominal values and limits from method RDLs (pCi/mL) 1.00
618-7 Burial Ground-Other

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-149			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 149												
R809093-01			J17HM8	0.168	0.505			38		943			12	09/17/08	09/17	SS-027
R809093-02			Lab Control Sample	0.141	0.500			43		943				09/17/08	09/17	SS-028
R809093-03			Method Blank	0.142	0.500			43		942				09/17/08	09/17	SS-033
R809093-04			Duplicate (R809093-01)	0.136	0.505			43		942			12	09/17/08	09/17	SS-042
Nominal values and limits from method				1.00	0.500			20-105		50	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.147 ± 0.029
YIELD 42 ± 5

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test	PU
Matrix	LIQUID
SDG	7892
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
Preparation batch 6160-149								
R809093-01			7892-001	J17HM8	U		U	
R809093-02			7892-002	Lab Control Sample	ok		ok	
R809093-03			7892-003	Method Blank	U		U	
R809093-04			7892-004	Duplicate (R809093-01)	-	U	-	U
Nominal values and limits from method 618-7 Burial Ground-Other				RDLs (pCi/mL)	1.00		1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-149 2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 149																
R809093-01			J17HM8	0.507	0.505			43		139			13	09/17/08	09/18	SS-035
R809093-02			Lab Control Sample	0.288	0.500			81		139				09/17/08	09/18	SS-036
R809093-03			Method Blank	0.200	0.500			73		139				09/17/08	09/18	SS-037
R809093-04			Duplicate (R809093-01)	0.267	0.505			70		139			13	09/17/08	09/18	SS-038
Nominal values and limits from method				1.00	0.500			20-105		50			180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	0.316	±	0.266
YIELD	67	±	33

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test TH Matrix LIQUID
SDG 7892
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230	
Preparation batch 6160-149						
R809093-01			7892-001	J17HM8	U	
R809093-02			7892-002	Lab Control Sample	ok	
R809093-03			7892-003	Method Blank	U	
R809093-04			7892-004	Duplicate (R809093-01)	-	U

Nominal values and limits from method RDLs (pCi/mL) 1.00
618-7 Burial Ground-Other

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-149			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 149													
R809093-01			J17HM8	0.328	0.252			99		172			12	09/16/08	09/17	SS-033
R809093-02			Lab Control Sample	0.199	0.250			98		172				09/16/08	09/17	SS-027
R809093-03			Method Blank	0.148	0.250			94		942				09/16/08	09/17	SS-032
R809093-04			Duplicate (R809093-01)	0.165	0.252			104		941			12	09/16/08	09/17	SS-056
Nominal values and limits from method				1.00	0.250			20-110		100	100		180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.210 ± 0.163
YIELD 99 ± 8

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test U Matrix LIQUID
SDG 7892
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM IN LIQUID
ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 6160-149											
R809093-01			7892-001	J17HM8	0.095	U	U				
R809093-02			7892-002	Lab Control Sample	ok	ok	ok				
R809093-03			7892-003	Method Blank	U	U	U				
R809093-04			7892-004	Duplicate (R809093-01)	ok	- U	ok	111	99	27	32
Nominal values and limits from method				RDLs (pCi/mL)	1.00	1.00	1.00				
618-7 Burial Ground-Other								Averages 111		27	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 6160-149			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 149												
R809093-01			J17HM8	0.088	0.505			99		236			11	09/16/08	09/16	SS-036
R809093-02			Lab Control Sample	0.598	0.500			93		237				09/16/08	09/16	SS-028
R809093-03			Method Blank	0.132	0.500			92		236				09/16/08	09/16	SS-040
R809093-04			Duplicate (R809093-01)	0.107	0.505			97		236			11	09/16/08	09/16	SS-042
Nominal values and limits from method				1.00	0.500					100			180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.231 ± 0.490
YIELD 95 ± 7

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test	SR
Matrix	LIQUID
SDG	7892
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN LIQUIDS

BETA COUNTING

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
Preparation batch 6160-149						
R809093-01			7892-001	J17HM8	U	
R809093-02			7892-002	Lab Control Sample	ok	
R809093-03			7892-003	Method Blank	U	
R809093-04			7892-004	Duplicate (R809093-01)	-	U

Nominal values and limits from method RDLs (pCi/mL) 1.00

618-7 Burial Ground-Other

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-149			2σ prep error 10.4 % Reference Lab Notebook #6160, pg. 149													
R809093-01			J17HM8	0.277	1.01			93		100			10	09/15/08	09/15	GRB-201
R809093-02			Lab Control Sample	0.267	1.00			87		100				09/15/08	09/15	GRB-202
R809093-03			Method Blank	0.253	1.00			92		100				09/15/08	09/15	GRB-203
R809093-04			Duplicate (R809093-01)	0.257	1.01			95		100			10	09/15/08	09/15	GRB-204
Nominal values and limits from method				1.00	1.00					100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES	MDA	0.264	± 0.022
	YIELD	92	± 7

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test 93A Matrix LIQUID
SDG 7892
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 6160-149						
R809093-01	93		7892-001	J17HM8	U	
R809093-02	93		7892-002	Lab Control Sample	ok	
R809093-03	93		7892-003	Method Blank	U	
R809093-04	93		7892-004	Duplicate (R809093-01)	-	U

Nominal values and limits from method RDLs (pCi/mL) 10.0
618-7 Burial Ground-Other

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-149			2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 149													
R809093-01	93		J17HM8	2.02	0.101			1		100			11	09/15/08	09/16	GRB-107
R809093-02	93		Lab Control Sample	6.78	0.100			60		100				09/15/08	09/16	GRB-108
R809093-03	93		Method Blank	8.57	0.100			61		100				09/15/08	09/17	GRB-213
R809093-04	93		Duplicate (R809093-01)	2.94	0.101			1		100			13	09/15/08	09/18	GRB-213
Nominal values and limits from method				10.0	0.100			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 FOR 4 SAMPLES				
	MDA	5.08	±	6.22
	RESIDUE	31	±	69

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test 93B Matrix LIQUID
SDG 7892
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 6160-149						
R809093-01	93		7892-001	J17HM8	U	
R809093-02	93		7892-002	Lab Control Sample	ok	
R809093-03	93		7892-003	Method Blank	U	
R809093-04	93		7892-004	Duplicate (R809093-01)	-	U

Nominal values and limits from method RDLs (pCi/mL) 15.0
618-7 Burial Ground-Other

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-149			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 149													
R809093-01	93		J17HM8	8.38	0.101			1		100			11	09/15/08	09/16	GRB-107
R809093-02	93		Lab Control Sample	6.66	0.100			60		100				09/15/08	09/16	GRB-108
R809093-03	93		Method Blank	8.88	0.100			61		100				09/15/08	09/17	GRB-213
R809093-04	93		Duplicate (R809093-01)	8.40	0.101			1		100			13	09/15/08	09/18	GRB-213
Nominal values and limits from method				15.0	0.100			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 FOR 4 SAMPLES
MDA 8.08 ± 1.95
RESIDUE 31 ± 69

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/18/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test GAM Matrix LIQUID
SDG 7892
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 6160-149								
R809093-01			7892-001	J17HM8	U		U	
R809093-02			7892-002	Lab Control Sample	ok		ok	
R809093-03			7892-003	Method Blank	U		U	
R809093-04			7892-004	Duplicate (R809093-01)	-	U	-	U
Nominal values and limits from method 618-7 Burial Ground-Other				RDLs (pCi/mL)	0.050		0.050	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-149			2σ prep error 7.0 %	Reference Lab Notebook #6160, pg. 149												
R809093-01			J17HM8	0.053	101					408			10	09/12/08	09/15	JR,07,00
R809093-02			Lab Control Sample	0.091	100					407				09/12/08	09/15	JR,01,00
R809093-03			Method Blank	0.053	100					456				09/12/08	09/17	JR,02,00
R809093-04			Duplicate (R809093-01)	0.048	101					456			12	09/12/08	09/17	JR,01,00
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 FOR 4 SAMPLES
MDA 0.061 ± 0.040
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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).

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

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.

SDG 7892
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

SDG 7892
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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'

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/18/08

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.

* Prepareation 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.

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

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.

7892 K1327

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-086	Page 1 of 1

Collector: S. Deeter	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code	Data Turnaround: ~~15~~ 7 Days JRD 9/5/08		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums) K1327 (7892)		SAF No.: RC-088
Ice Chest No.: SML-461	Field Logbook No.: EL-1395-13	COA: RG61878500	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080338		Bill of Lading/Air Bill No.: See ospC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				RCF#	Drum#
Other liquid		9/5/08									
Sample No. / Matrix * / Sample Date / Sample Time											
J17HM8 / OTHER / 9/5/08 / 1500						X				J17HN8	7046
J17HM9 / OTHER											
J17HN0 / OTHER											
J17HN1 / OTHER											
J17HN2 / OTHER											

JRD 9/5/08

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: S DEETER	9-5-08 1630	Received By/Stored In: JR DeBuigne JRD	9/5/08 1630
Relinquished By/Removed From: JR DeBuigne JRD	9/5/08 1700	Received By/Stored In: 1060 JB	9/5/08 1700
Relinquished By/Removed From: 1060/JB	SEP 10 2008 1200	Received By/Stored In: M Stankovich	SEP 10 2008 1200
Relinquished By/Removed From: M Stankovich	SEP 10 2008 1200	Received By/Stored In: FedEx	
Relinquished By/Removed From: FED EX		Received By/Stored In:	09/11/08 09:05
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Ak 9/11/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 09/11/08 09:05 CoC No. RC-088-086

Container I.D. No. SML-461 Requested TAT (Days) 7 P.O. Received Yes [ ] No [X]

INSPECTION

1 Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]

2 Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]

3 Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]

4 Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]

5 Packing material is: Wet [ ] Dry [X]

6 Number of samples in shipping container 1 Sample Matrix X LIQUID

7 Number of containers per sample 1 (Or see CoC)

8 Samples are in correct container Yes [X] No [ ]

9 Paperwork agrees with samples? Yes [X] No [ ]

10 Samples have Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]

11 Samples are In good condition [X] 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 [signature] Date 09/11/08 Time 10:15

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe
J17HM8	<60						

Ion Chamber Ser. No _____ Calibration date _____

Alpha Meter Ser. No _____ Calibration date _____

Beta/Gamma Meter Ser. No 100482 Calibration date 10 JUL 08

Form: SCF-02, 07-30-07

"over 55 years of quality nuclear services"

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

September 29, 2008

RECEIVED
SEP 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-09-094-7893, SDG K1327

Dear Ms. Kessner:

Enclosed is the data report for five liquid (other liquid) samples designated under SAF No. RC-088 received at Eberline Services on September 11, 2008. The samples were analyzed according to the accompanying chain-of-custody document.

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 K1327 was composed of five liquid (other liquid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Ground-Other Liquid.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on September 26, 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 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

Thorium-230 activity greater than the sample MDA but less than the required detection limit was observed in the QC blank. No other problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

The relative percent difference in the original and duplicate Am-241 results was 200%, greater than the control limit of 170%; the DER was 3.5. No other problems were encountered during the course of the analyses.

2.7 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."

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

9/29/08
Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1327

SDG	7893
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1327

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
Lab Control Samples	10
Duplicates	11
Data Sheets	13
Method Summaries	18
Report Guides	30
End of Section	44

Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

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 K1327

SDG 7893
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R809094-01	J17H45	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-076	09/05/08 13:50
R809094-02	J17H46	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-076	09/05/08 14:05
R809094-03	J17H47	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-076	09/05/08 14:15
R809094-04	J17H48	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-076	09/05/08 14:40
R809094-05	J17H49	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-076	09/05/08 14:50
R809094-06	Lab Control Sample		LIQUID		RC-088		
R809094-07	Method Blank		LIQUID		RC-088		
R809094-08	Duplicate (R809094-03)	618-7 Burial Grnd(drums)	LIQUID		RC-088		09/05/08 14:15

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7893
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

C BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
893	RC-088-076	J17H45	LIQUID		501 mL		09/11/08	6	R809094-01	7893-001
		J17H46	LIQUID		512 mL		09/11/08	6	R809094-02	7893-002
		J17H47	LIQUID		468 mL		09/11/08	6	R809094-03	7893-003
		J17H48	LIQUID		497 mL		09/11/08	6	R809094-04	7893-004
		J17H49	LIQUID		494 mL		09/11/08	6	R809094-05	7893-005
		Method Blank	LIQUID						R809094-07	7893-007
		Lab Control Sample	LIQUID						R809094-06	7893-006
		Duplicate (R809094-03)	LIQUID		468 mL		09/11/08	6	R809094-08	7893-008

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7893
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	LIQUID	Americium 241 in Liquid	6160-167	8.0	5			1	1	1/1		
PU	LIQUID	Plutonium-238,239/240, Liquid	6160-167	8.0	5			1	1	1/1		
TH	LIQUID	Thorium, Isotopic in Liquid	6160-167	8.0	5			1	1	1/1		
U	LIQUID	Uranium in Liquid	6160-167	8.0	5			1	1	1/1		
Beta Counting												
SR	LIQUID	Total Strontium in Liquids	6160-167	10.4	5			1	1	1/1		
Gas Proportional Counting												
93A	LIQUID	Gross Alpha in Liquid	6160-167	20.6	5			1	1	1/1		
93B	LIQUID	Gross Beta in Liquid	6160-167	11.0	5			1	1	1/1		
Gamma Spectroscopy												
GAM	LIQUID	Gamma Scan in Liquid	6160-167	7.0	5			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 Hanford1
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7893
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
809094-01	J17H45			7893-001	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7893-001	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
09/11/08	RC-088-076	RC-088		7893-001	AM		09/20/08	09/22/08	BW	Americium 241 in Liquid
				7893-001	GAM		09/22/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-001	PU		09/22/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-001	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-001	TH		09/24/08	09/25/08	BW	Thorium, Isotopic in Liquid
				7893-001	U		09/20/08	09/22/08	BW	Uranium in Liquid
809094-02	J17H46			7893-002	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7893-002	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
09/11/08	RC-088-076	RC-088		7893-002	AM		09/20/08	09/22/08	BW	Americium 241 in Liquid
				7893-002	GAM		09/22/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-002	PU		09/22/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-002	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-002	TH		09/24/08	09/25/08	BW	Thorium, Isotopic in Liquid
				7893-002	U		09/20/08	09/22/08	BW	Uranium in Liquid
809094-03	J17H47			7893-003	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7893-003	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
09/11/08	RC-088-076	RC-088		7893-003	AM		09/20/08	09/22/08	BW	Americium 241 in Liquid
				7893-003	GAM		09/22/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-003	PU		09/22/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-003	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-003	TH		09/24/08	09/25/08	BW	Thorium, Isotopic in Liquid
				7893-003	U		09/20/08	09/22/08	BW	Uranium in Liquid
809094-04	J17H48			7893-004	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7893-004	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
09/11/08	RC-088-076	RC-088		7893-004	AM		09/20/08	09/22/08	BW	Americium 241 in Liquid
				7893-004	GAM		09/23/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-004	PU		09/22/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-004	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-004	TH		09/24/08	09/25/08	BW	Thorium, Isotopic in Liquid
				7893-004	U		09/21/08	09/22/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7893
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
809094-05	J17H49			7893-005	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7893-005	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
09/11/08	RC-088-076	RC-088		7893-005	AM		09/20/08	09/22/08	BW	Americium 241 in Liquid
				7893-005	GAM		09/23/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-005	PU		09/22/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-005	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-005	TH		09/26/08	09/25/08	BW	Thorium, Isotopic in Liquid
				7893-005	U		09/21/08	09/22/08	BW	Uranium in Liquid
809094-06	Lab Control Sample			7893-006	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
			LIQUID	7893-006	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
		RC-088		7893-006	AM		09/21/08	09/22/08	BW	Americium 241 in Liquid
				7893-006	GAM		09/25/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-006	PU		09/23/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-006	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-006	TH		09/26/08	09/26/08	BW	Thorium, Isotopic in Liquid
				7893-006	U		09/21/08	09/22/08	BW	Uranium in Liquid
809094-07	Method Blank			7893-007	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
			LIQUID	7893-007	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
		RC-088		7893-007	AM		09/21/08	09/22/08	BW	Americium 241 in Liquid
				7893-007	GAM		09/25/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-007	PU		09/22/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-007	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-007	TH		09/26/08	09/25/08	BW	Thorium, Isotopic in Liquid
				7893-007	U		09/21/08	09/22/08	BW	Uranium in Liquid
809094-08	Duplicate (R809094-03)			7893-008	93A/93		09/23/08	09/24/08	BW	Gross Alpha in Liquid
09/05/08	618-7 Burial Grnd(drums)		LIQUID	7893-008	93B/93		09/23/08	09/24/08	BW	Gross Beta in Liquid
09/11/08		RC-088		7893-008	AM		09/21/08	09/22/08	BW	Americium 241 in Liquid
				7893-008	GAM		09/23/08	09/26/08	CSS	Gamma Scan in Liquid
				7893-008	PU		09/22/08	09/24/08	BW	Plutonium-238,239/240, Liquid
				7893-008	SR		09/19/08	09/24/08	BW	Total Strontium in Liquids
				7893-008	TH		09/26/08	09/25/08	BW	Thorium, Isotopic in Liquid
				7893-008	U		09/21/08	09/22/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

SDG 7893
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Liquid	900.0_ALPHABETA_GPC	5			1	1	1	8
93B/93	RC-088	Gross Beta in Liquid	900.0_ALPHABETA_GPC	5			1	1	1	8
AM	RC-088	Americium 241 in Liquid	AMCMISO_IE_PLATE_AEA	5			1	1	1	8
GAM	RC-088	Gamma Scan in Liquid	GAMMA_GS	5			1	1	1	8
PU	RC-088	Plutonium-238,239/240, Liquid	PUISO_PLATE_AEA	5			1	1	1	8
SR	RC-088	Total Strontium in Liquids	SRTOT_SEP_PRECIP_GPC	5			1	1	1	8
TH	RC-088	Thorium, Isotopic in Liquid	THISO_IE_PLATE_AEA	5			1	1	1	8
U	RC-088	Uranium in Liquid	UISO_PLATE_AEA	5			1	1	1	8
TOTALS				40			8	8	8	64

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-007 Method Blank

METHOD BLANK

SDG	7893	Client/Case no	Hanford	SDG K1327
Contact	Melissa C. Mannion	Contract	No. S00W235A00	
Lab sample id	R809094-07	Client sample id	Method Blank	
Dept sample id	7893-007	Material/Matrix		LIQUID
		SAF No	RC-088	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.404	2.7	6.27	10.0	U	93A
Gross Beta	12587-47-2	-2.88	3.4	6.06	15.0	U	93B
Total Strontium	SR-RAD	-0.041	0.11	0.233	1.00	U	SR
Americium 241	14596-10-2	0.042	0.17	0.320	1.00	U	AM
Thorium 228	14274-82-9	-0.109	0.11	0.334	1.00	U	TH
Thorium 230	14269-63-7	0.271	0.22	0.207	1.00		TH
Thorium 232	TH-232	0	0.054	0.207	1.00	U	TH
Uranium 233/234	U-233/234	0	0.040	0.154	1.00	U	U
Uranium 235	15117-96-1	0	0.049	0.186	1.00	U	U
Uranium 238	U-238	-0.020	0.040	0.154	1.00	U	U
Plutonium 238	13981-16-3	0.019	0.049	0.087	1.00	U	PU
Plutonium 239/240	PU-239/240	0.009	0.012	0.024	1.00	U	PU
Potassium 40	13966-00-2	U		0.713		U	GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.050	U	GAM
Radium 226	13982-63-3	U		0.078	0.100	U	GAM
Radium 228	15262-20-1	U		0.184	0.200	U	GAM
Europium 152	14683-23-9	U		0.108	0.100	U	GAM
Europium 154	15585-10-1	U		0.113	0.100	U	GAM
Europium 155	14391-16-3	U		0.086	0.100	U	GAM
Thorium 228	14274-82-9	U		0.057		U	GAM
Thorium 232	TH-232	U		0.184		U	GAM
Uranium 235	15117-96-1	U		0.124		U	GAM
Uranium 238	U-238	U		4.70		U	GAM
Americium 241	14596-10-2	U		0.144		U	GAM

618-7 Burial Ground-Other Liquid

QC-BLANK #67292

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7893

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1327

Contract No. S00W235A00

Lab sample id R809094-06

Dept sample id 7893-006

Client sample id Lab Control Sample

Material/Matrix LIQUID

SAF No RC-088

ANALYTE	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ADDED pCi/mL	2σ ERR pCi/mL	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	121	18	6.19	10.0		93A	112	4.5	108	58-142	70-130
Gross Beta	108	7.9	5.87	15.0		93B	111	4.4	97	80-120	70-130
Total Strontium	10.7	0.55	0.235	1.00		SR	10.2	0.41	105	81-119	80-120
Americium 241	22.7	2.4	0.245	1.00		AM	22.4	0.90	101	79-121	80-120
Thorium 230	38.5	3.4	0.215	1.00	B	TH	41.6	1.7	93	82-118	80-120
Uranium 233/234	17.5	1.6	0.752	1.00		U	19.3	0.77	91	82-118	80-120
Uranium 235	14.3	1.4	0.160	1.00		U	15.7	0.63	91	82-118	80-120
Uranium 238	17.8	1.7	0.719	1.00		U	21.0	0.84	85	83-117	80-120
Plutonium 238	23.0	1.7	0.186	1.00		PU	25.8	1.0	89	84-116	80-120
Plutonium 239/240	27.3	1.9	0.106	1.00		PU	29.0	1.2	94	84-116	80-120
Cobalt 60	2.53	0.086	0.040	0.050		GAM	2.42	0.097	104	86-114	80-120
Cesium 137	2.95	0.077	0.049	0.050		GAM	2.79	0.11	106	87-113	80-120

618-7 Burial Ground-Other Liquid

QC-LCS #67291

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-008 J17H47

DUPLICATE

SDG	7893	Client/Case no	Hanford SDG K1327
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R809094-08	Lab sample id	R809094-03
Dept sample id	7893-008	Dept sample id	7893-003
		Received	09/11/08
Client sample id	J17H47		
Location/Matrix	618-7 Burial Grnd(drums) LIQUID		
Collected/Volume	09/05/08 14:15 468 mL		
Custody/SAF No	RC-088-076 RC-088		

ANALYTE	DUPLICATE pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ORIGINAL pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	0.214	0.99	1.95	10.0	U	93A	0.731	1.1	1.79	U	-		0.7
Gross Beta	2.85	3.9	6.48	15.0	U	93B	1.97	3.5	5.73	U	-		0.3
Total Strontium	-0.006	0.11	0.217	1.00	U	SR	0.038	0.11	0.218	U	-		0.6
Americium 241	-0.032	0.063	0.241	1.00	U	AM	0.117	0.055	0.061		200	170	3.5
Thorium 228	-0.160	0.16	0.408	1.00	U	TH	-0.007	0.067	0.127	U	-		1.8
Thorium 230	0.053	0.16	0.294	1.00	U	TH	0.066	0.080	0.089	U	-		0.1
Thorium 232	-0.027	0.053	0.203	1.00	U	TH	0.013	0.027	0.051	U	-		1.3
Uranium 233/234	0.104	0.078	0.100	1.00		U	0.057	0.032	0.033		58	158	1.1
Uranium 235	0.016	0.032	0.121	1.00	U	U	0.020	0.020	0.025	U	-		0.2
Uranium 238	0.065	0.052	0.100	1.00	U	U	0.051	0.027	0.021		24	152	0.5
Plutonium 238	0.019	0.043	0.075	1.00	U	PU	0.042	0.085	0.203	U	-		0.5
Plutonium 239/240	-0.003	0.018	0.041	1.00	U	PU	0.042	0.042	0.162	U	-		2.0
Potassium 40	U		0.840		U	GAM	U		0.984	U	-		0.2
Cobalt 60	U		0.042	0.050	U	GAM	U		0.056	U	-		0.4
Cesium 137	U		0.038	0.050	U	GAM	U		0.050	U	-		0.4
Radium 226	U		0.129	0.100	U	GAM	U		0.119	U	-		0.1
Radium 228	U		0.286	0.200	U	GAM	U		0.221	U	-		0.4
Europium 152	U		0.162	0.100	U	GAM	U		0.125	U	-		0.4
Europium 154	U		0.105	0.100	U	GAM	U		0.163	U	-		0.6
Europium 155	U		0.109	0.100	U	GAM	U		0.104	U	-		0.1
Thorium 228	U		0.078		U	GAM	U		0.073	U	-		0.1
Thorium 232	U		0.286		U	GAM	U		0.221	U	-		0.4
Uranium 235	U		0.178		U	GAM	U		0.169	U	-		0.1
Uranium 238	U		4.68		U	GAM	U		6.86	U	-		0.5
Americium 241	U		0.103		U	GAM	U		0.194	U	-		0.8

618-7 Burial Ground-Other Liquid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-008 J17H47

DUPLICATE, cont.

SDG	7893			Client/Case no	Hanford SDG K1327
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R809094-08	Lab sample id	R809094-03	Client sample id	J17H47
Dept sample id	7893-008	Dept sample id	7893-003	Location/Matrix	618-7 Burial Grnd(drums) LIQUID
		Received	09/11/08	Collected/Volume	09/05/08 14:15 468 mL
				Custody/SAF No	RC-088-076 RC-088

QC-DUP#3 67293

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-001 J17H45

DATA SHEET

SDG	7893	Client/Case no	Hanford SDG K1327
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R809094-01	Client sample id	J17H45
Dept sample id	7893-001	Location/Matrix	618-7 Burial Grnd(drums) LIQUID
Received	09/11/08	Collected/Volume	09/05/08 13:50 501 mL
		Custody/SAF No	RC-088-076 RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.584	1.1	1.96	10.0	U	93A
Gross Beta	12587-47-2	2.16	3.1	5.05	15.0	U	93B
Total Strontium	SR-RAD	0.049	0.11	0.222	1.00	U	SR
Americium 241	14596-10-2	0.084	0.069	0.097	1.00	U	AM
Thorium 228	14274-82-9	0.061	0.095	0.168	1.00	U	TH
Thorium 230	14269-63-7	0.135	0.095	0.115	1.00	B	TH
Thorium 232	TH-232	0.014	0.041	0.065	1.00	U	TH
Uranium 233/234	U-233/234	0.173	0.049	0.023	1.00		U
Uranium 235	15117-96-1	0.015	0.015	0.028	1.00	U	U
Uranium 238	U-238	0.118	0.037	0.023	1.00		U
Plutonium 238	13981-16-3	0	0.050	0.192	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.050	0.192	1.00	U	PU
Potassium 40	13966-00-2	U		0.517		U	GAM
Cobalt 60	10198-40-0	U		0.050	0.050	U	GAM
Cesium 137	10045-97-3	U		0.045	0.050	U	GAM
Radium 226	13982-63-3	U		0.212	0.100	U	GAM
Radium 228	15262-20-1	U		0.191	0.200	U	GAM
Europium 152	14683-23-9	U		0.117	0.100	U	GAM
Europium 154	15585-10-1	U		0.144	0.100	U	GAM
Europium 155	14391-16-3	U		0.079	0.100	U	GAM
Thorium 228	14274-82-9	U		0.073		U	GAM
Thorium 232	TH-232	U		0.191		U	GAM
Uranium 235	15117-96-1	U		0.145		U	GAM
Uranium 238	U-238	U		9.10		U	GAM
Americium 241	14596-10-2	U		0.044		U	GAM

618-7 Burial Ground-Other Liquid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-002 J17H46

DATA SHEET

SDG	7893	Client/Case no	Hanford SDG K1327
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R809094-02	Client sample id	J17H46
Dept sample id	7893-002	Location/Matrix	618-7 Burial Grnd(drums) LIQUID
Received	09/11/08	Collected/Volume	09/05/08 14:05 512 mL
		Custody/SAF No	RC-088-076 RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.302	0.72	1.88	10.0	U	93A
Gross Beta	12587-47-2	1.28	4.7	7.66	15.0	U	93B
Total Strontium	SR-RAD	0.064	0.13	0.253	1.00	U	SR
Americium 241	14596-10-2	0.078	0.052	0.066	1.00		AM
Thorium 228	14274-82-9	0.074	0.098	0.175	1.00	U	TH
Thorium 230	14269-63-7	0.092	0.086	0.094	1.00	U	TH
Thorium 232	TH-232	-0.012	0.012	0.047	1.00	U	TH
Uranium 233/234	U-233/234	0.035	0.025	0.024	1.00		U
Uranium 235	15117-96-1	-0.003	0.012	0.029	1.00	U	U
Uranium 238	U-238	0.032	0.020	0.019	1.00		U
Plutonium 238	13981-16-3	-0.048	0.095	0.263	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.048	0.182	1.00	U	PU
Potassium 40	13966-00-2	U		0.798		U	GAM
Cobalt 60	10198-40-0	U		0.038	0.050	U	GAM
Cesium 137	10045-97-3	U		0.037	0.050	U	GAM
Radium 226	13982-63-3	U		0.080	0.100	U	GAM
Radium 228	15262-20-1	U		0.272	0.200	U	GAM
Europium 152	14683-23-9	U		0.110	0.100	U	GAM
Europium 154	15585-10-1	U		0.120	0.100	U	GAM
Europium 155	14391-16-3	U		0.102	0.100	U	GAM
Thorium 228	14274-82-9	U		0.078		U	GAM
Thorium 232	TH-232	U		0.272		U	GAM
Uranium 235	15117-96-1	U		0.174		U	GAM
Uranium 238	U-238	U		4.17		U	GAM
Americium 241	14596-10-2	U		0.100		U	GAM

618-7 Burial Ground-Other Liquid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-003 **J17H47**

DATA SHEET

SDG	7893	Client/Case no	Hanford	SDG K1327
Contact	Melissa C. Mannion	Contract	No. S00W235A00	
Lab sample id	R809094-03	Client sample id	J17H47	
Dept sample id	7893-003	Location/Matrix	618-7 Burial Grnd(drums)	LIQUID
Received	09/11/08	Collected/Volume	09/05/08 14:15	468 mL
		Custody/SAF No	RC-088-076	RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.731	1.1	1.79	10.0	U	93A
Gross Beta	12587-47-2	1.97	3.5	5.73	15.0	U	93B
Total Strontium	SR-RAD	0.038	0.11	0.218	1.00	U	SR
Americium 241	14596-10-2	0.117	0.055	0.061	1.00		AM
Thorium 228	14274-82-9	-0.007	0.067	0.127	1.00	U	TH
Thorium 230	14269-63-7	0.066	0.080	0.089	1.00	U	TH
Thorium 232	TH-232	0.013	0.027	0.051	1.00	U	TH
Uranium 233/234	U-233/234	0.057	0.032	0.033	1.00		U
Uranium 235	15117-96-1	0.020	0.020	0.025	1.00	U	U
Uranium 238	U-238	0.051	0.027	0.021	1.00		U
Plutonium 238	13981-16-3	0.042	0.085	0.203	1.00	U	PU
Plutonium 239/240	PU-239/240	0.042	0.042	0.162	1.00	U	PU
Potassium 40	13966-00-2	U		0.984		U	GAM
Cobalt 60	10198-40-0	U		0.056	0.050	U	GAM
Cesium 137	10045-97-3	U		0.050	0.050	U	GAM
Radium 226	13982-63-3	U		0.119	0.100	U	GAM
Radium 228	15262-20-1	U		0.221	0.200	U	GAM
Europium 152	14683-23-9	U		0.125	0.100	U	GAM
Europium 154	15585-10-1	U		0.163	0.100	U	GAM
Europium 155	14391-16-3	U		0.104	0.100	U	GAM
Thorium 228	14274-82-9	U		0.073		U	GAM
Thorium 232	TH-232	U		0.221		U	GAM
Uranium 235	15117-96-1	U		0.169		U	GAM
Uranium 238	U-238	U		6.86		U	GAM
Americium 241	14596-10-2	U		0.194		U	GAM

618-7 Burial Ground-Other Liquid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-004 J17H48

DATA SHEET

SDG	7893	Client/Case no	Hanford SDG K1327
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R809094-04	Client sample id	J17H48
Dept sample id	7893-004	Location/Matrix	618-7 Burial Grnd(drums) LIQUID
Received	09/11/08	Collected/Volume	09/05/08 14:40 497 mL
		Custody/SAF No	RC-088-076 RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.278	0.82	1.58	10.0	U	93A
Gross Beta	12587-47-2	1.05	2.8	4.72	15.0	U	93B
Total Strontium	SR-RAD	-0.016	0.11	0.233	1.00	U	SR
Americium 241	14596-10-2	0.057	0.042	0.051	1.00		AM
Thorium 228	14274-82-9	0.006	0.078	0.147	1.00	U	TH
Thorium 230	14269-63-7	-0.013	0.065	0.087	1.00	U	TH
Thorium 232	TH-232	0.006	0.026	0.050	1.00	U	TH
Uranium 233/234	U-233/234	0.139	0.093	0.177	1.00	U	U
Uranium 235	15117-96-1	0	0.056	0.214	1.00	U	U
Uranium 238	U-238	0.092	0.093	0.177	1.00	U	U
Plutonium 238	13981-16-3	0	0.093	0.223	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.046	0.178	1.00	U	PU
Potassium 40	13966-00-2	U		1.87		U	GAM
Cobalt 60	10198-40-0	U		0.068	0.050	U	GAM
Cesium 137	10045-97-3	U		0.071	0.050	U	GAM
Radium 226	13982-63-3	U		0.141	0.100	U	GAM
Radium 228	15262-20-1	U		0.325	0.200	U	GAM
Europium 152	14683-23-9	U		0.189	0.100	U	GAM
Europium 154	15585-10-1	U		0.194	0.100	U	GAM
Europium 155	14391-16-3	U		0.147	0.100	U	GAM
Thorium 228	14274-82-9	U		0.102		U	GAM
Thorium 232	TH-232	U		0.325		U	GAM
Uranium 235	15117-96-1	U		0.259		U	GAM
Uranium 238	U-238	U		7.87		U	GAM
Americium 241	14596-10-2	U		0.259		U	GAM

618-7 Burial Ground-Other Liquid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

7893-005 J17H49

DATA SHEET

SDG	7893	Client/Case no	Hanford	SDG K1327	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R809094-05	Client sample id	J17H49		
Dept sample id	7893-005	Location/Matrix	618-7 Burial Grnd(drums)	LIQUID	
Received	09/11/08	Collected/Volume	09/05/08 14:50	494 mL	
		Custody/SAF No	RC-088-076	RC-088	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	4.78	3.4	4.93	10.0	U	93A
Gross Beta	12587-47-2	0.798	3.3	5.45	15.0	U	93B
Total Strontium	SR-RAD	-0.034	0.11	0.238	1.00	U	SR
Americium 241	14596-10-2	0.035	0.042	0.063	1.00	U	AM
Thorium 228	14274-82-9	-0.078	0.16	0.348	1.00	U	TH
Thorium 230	14269-63-7	0.026	0.16	0.198	1.00	U	TH
Thorium 232	TH-232	0	0.052	0.198	1.00	U	TH
Uranium 233/234	U-233/234	2.63	0.62	0.277	1.00		U
Uranium 235	15117-96-1	0.210	0.14	0.268	1.00	U	U
Uranium 238	U-238	1.65	0.48	0.221	1.00		U
Plutonium 238	13981-16-3	0.095	0.068	0.099	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.007	0.020	0.052	1.00	U	PU
Potassium 40	13966-00-2	U		2.32		U	GAM
Cobalt 60	10198-40-0	U		0.089	0.050	U	GAM
Cesium 137	10045-97-3	U		0.087	0.050	U	GAM
Radium 226	13982-63-3	U		0.201	0.100	U	GAM
Radium 228	15262-20-1	U		0.389	0.200	U	GAM
Europium 152	14683-23-9	U		0.244	0.100	U	GAM
Europium 154	15585-10-1	U		0.272	0.100	U	GAM
Europium 155	14391-16-3	U		0.178	0.100	U	GAM
Thorium 228	14274-82-9	U		0.126		U	GAM
Thorium 232	TH-232	U		0.389		U	GAM
Uranium 235	15117-96-1	U		0.337		U	GAM
Uranium 238	U-238	U		10.6		U	GAM
Americium 241	14596-10-2	U		0.071		U	GAM

618-7 Burial Ground-Other Liquid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test AM Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241
reparation batch 6160-167					
309094-01			7893-001	J17H45	U
309094-02			7893-002	J17H46	0.078
309094-03			7893-003	J17H47	0.117
309094-04			7893-004	J17H48	0.057
809094-05			7893-005	J17H49	U
809094-06			7893-006	Lab Control Sample	ok
809094-07			7893-007	Method Blank	U
809094-08			7893-008	Duplicate (R809094-03)	OUT U

ominal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Ground-Other Liquid

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6160-167			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 167													
:809094-01			J17H45	0.097	0.549			60		856			15	09/19/08	09/20	SS-042
:809094-02			J17H46	0.066	0.549			62		856			15	09/19/08	09/20	SS-051
:809094-03			J17H47	0.061	0.546			75		856			15	09/19/08	09/20	SS-052
:809094-04			J17H48	0.051	0.552			71		856			15	09/19/08	09/20	SS-053
:809094-05			J17H49	0.063	0.505			73		856			15	09/19/08	09/20	SS-064
:809094-06			Lab Control Sample	0.245	0.500			61		109				09/19/08	09/21	SS-051
:809094-07			Method Blank	0.320	0.500			53		109				09/19/08	09/21	SS-052
:809094-08			Duplicate (R809094-03)	0.241	0.546			62		110			16	09/19/08	09/21	SS-053
Nominal values and limits from method				1.00	0.500			20-105		50	100		180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test AM	Matrix LIQUID
SDG 7893	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

AMERICIUM 241 IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. S00W235A00	
Contract SDG K1327	

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD	MDA	0.143	±	0.215
FOR 8 SAMPLES	YIELD	65	±	15

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test PU Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
reparation batch 6160-167								
309094-01			7893-001	J17H45	U		U	
309094-02			7893-002	J17H46	U		U	
809094-03			7893-003	J17H47	U		U	
809094-04			7893-004	J17H48	U		U	
809094-05			7893-005	J17H49	U		U	
809094-06			7893-006	Lab Control Sample	ok		ok	
809094-07			7893-007	Method Blank	U		U	
809094-08			7893-008	Duplicate (R809094-03)	-	U	-	U
lominal values and limits from method				RDLs (pCi/mL)	1.00		1.00	

·18-7 Burial Ground-Other Liquid

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-167			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 167												
R809094-01			J17H45	0.192	0.549			69		122			17	09/22/08	09/22	SS-059
R809094-02			J17H46	0.263	0.549			68		122			17	09/22/08	09/22	SS-061
R809094-03			J17H47	0.203	0.546			78		122			17	09/22/08	09/22	SS-062
R809094-04			J17H48	0.223	0.552			72		120			17	09/22/08	09/22	SS-064
R809094-05			J17H49	0.099	0.505			66		977			17	09/22/08	09/22	SS-036
R809094-06			Lab Control Sample	0.186	0.500			79		236				09/22/08	09/23	SS-028
R809094-07			Method Blank	0.087	0.500			73		979				09/22/08	09/22	SS-027
R809094-08			Duplicate (R809094-03)	0.075	0.546			78		980			17	09/22/08	09/22	SS-028
Nominal values and limits from method				1.00	0.500			20-105		50			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test	PU
Matrix	LIQUID
SDG	7893
Contact	Melissa C. Mannion

LAB METHOD SUMMARY, cont.

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1327

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD	MDA	0.166	±	0.140
FOR 8 SAMPLES	YIELD	73	±	10

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test TH Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
reparation batch 6160-167					
309094-01			7893-001	J17H45	0.135
309094-02			7893-002	J17H46	U
309094-03			7893-003	J17H47	U
309094-04			7893-004	J17H48	U
309094-05			7893-005	J17H49	U
809094-06			7893-006	Lab Control Sample	ok
809094-07			7893-007	Method Blank	0.271
809094-08			7893-008	Duplicate (R809094-03)	- U

ominal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Ground-Other Liquid

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6160-167			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 167													
809094-01			J17H45	0.168	0.275			99		632			19	09/23/08	09/24	SS-033
809094-02			J17H46	0.175	0.275			102		638			19	09/23/08	09/24	SS-036
809094-03			J17H47	0.127	0.273			96		638			19	09/23/08	09/24	SS-037
809094-04			J17H48	0.147	0.276			101		629			19	09/23/08	09/24	SS-063
809094-05			J17H49	0.348	0.252			94		175			21	09/23/08	09/26	SS-061
809094-06			Lab Control Sample	0.215	0.250			92		174				09/23/08	09/26	SS-063
809094-07			Method Blank	0.334	0.250			94		174				09/23/08	09/26	SS-064
809094-08			Duplicate (R809094-03)	0.408	0.273			107		173			21	09/23/08	09/26	SS-032
Nominal values and limits from method				1.00	0.250			20-110		100	100		180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test TH	Matrix LIQUID
SDG 7893	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. S00W235A00	
Contract SDG K1327	

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD	MDA	0.240	±	0.214
FOR 8 SAMPLES	YIELD	98	±	10

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test U Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
reparation batch 6160-167											
309094-01			7893-001	J17H45	0.173	U	0.118	147	62	13	13
309094-02			7893-002	J17H46	0.035	U	0.032	109	104	-9	38
309094-03			7893-003	J17H47	0.057	U	0.051	112	86	39	44
309094-04			7893-004	J17H48	U	U	U				
809094-05			7893-005	J17H49	2.63	U	1.65	159	60	13	9
809094-06			7893-006	Lab Control Sample	ok	ok	ok				
809094-07			7893-007	Method Blank	U	U	U				
809094-08			7893-008	Duplicate (R809094-03)	ok	- U	ok U				
ominal values and limits from method				RDLs (pCi/mL)	1.00	1.00	1.00				
18-7 Burial Ground-Other Liquid								Averages 132		14	

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-167			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 167												
809094-01			J17H45	0.028	0.549			84		856			15	09/19/08	09/20	SS-040
809094-02			J17H46	0.029	0.549			97		856			15	09/19/08	09/20	SS-063
809094-03			J17H47	0.033	0.546			92		856			15	09/19/08	09/20	SS-065
809094-04			J17H48	0.214	0.552			82		106			16	09/19/08	09/21	SS-027
809094-05			J17H49	0.277	0.505			83		106			16	09/19/08	09/21	SS-028
809094-06			Lab Control Sample	0.752	0.500			98		159				09/19/08	09/21	SS-032
809094-07			Method Blank	0.186	0.500			88		159				09/19/08	09/21	SS-034
809094-08			Duplicate (R809094-03)	0.121	0.546			97		159			16	09/19/08	09/21	SS-036
Nominal values and limits from method				1.00	0.500					100			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test U Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

URANIUM IN LIQUID
ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD	MDA	0.205	±	0.480
FOR 8 SAMPLES	YIELD	90	±	13

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test SR Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN LIQUIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
reparation batch 6160-167						
309094-01			7893-001	J17H45	U	
309094-02			7893-002	J17H46	U	
809094-03			7893-003	J17H47	U	
809094-04			7893-004	J17H48	U	
809094-05			7893-005	J17H49	U	
809094-06			7893-006	Lab Control Sample	ok	
809094-07			7893-007	Method Blank	U	
809094-08			7893-008	Duplicate (R809094-03)	-	U

ominal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Ground-Other Liquid

IETHOD PERFORMANCE

AB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-167			2σ prep error 10.4 % Reference Lab Notebook #6160, pg. 167													
809094-01			J17H45	0.222	1.10			95		100			14	09/19/08	09/19	GRB-220
809094-02			J17H46	0.253	1.10			89		100			14	09/19/08	09/19	GRB-225
809094-03			J17H47	0.218	1.09			87		100			14	09/19/08	09/19	GRB-218
809094-04			J17H48	0.233	1.10			89		100			14	09/19/08	09/19	GRB-228
809094-05			J17H49	0.238	1.01			87		100			14	09/19/08	09/19	GRB-220
809094-06			Lab Control Sample	0.235	1.00			91		100				09/19/08	09/19	GRB-201
809094-07			Method Blank	0.233	1.00			89		100				09/19/08	09/19	GRB-222
809094-08			Duplicate (R809094-03)	0.217	1.09			89		100			14	09/19/08	09/19	GRB-223
Nominal values and limits from method				1.00	1.00					100			180			

PROCEDURES REFERENCE SRTOT_SEP_PRECIP_GPC
SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 5
CP-383 Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD MDA 0.231 ± 0.024
FOR 8 SAMPLES YIELD 90 ± 5

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test 93A Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
reparation batch 6160-167						
309094-01	93		7893-001	J17H45	U	
309094-02	93		7893-002	J17H46	U	
309094-03	93		7893-003	J17H47	U	
309094-04	93		7893-004	J17H48	U	
309094-05	93		7893-005	J17H49	U	
809094-06	93		7893-006	Lab Control Sample	ok	
809094-07	93		7893-007	Method Blank	U	
809094-08	93		7893-008	Duplicate (R809094-03)	-	U

ominal values and limits from method RDLs (pCi/mL) 10.0
18-7 Burial Ground-Other Liquid

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-167			2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 167													
.809094-01	93		J17H45	1.96	0.110			0		100			18	09/22/08	09/23	GRB-105
.809094-02	93		J17H46	1.88	0.110			0		100			18	09/22/08	09/23	GRB-107
.809094-03	93		J17H47	1.79	0.109			0		100			18	09/22/08	09/23	GRB-108
.809094-04	93		J17H48	1.58	0.110			0		100			18	09/22/08	09/23	GRB-109
.809094-05	93		J17H49	4.93	0.101			0		100			18	09/22/08	09/23	GRB-110
:809094-06	93		Lab Control Sample	6.19	0.100			59		100				09/22/08	09/23	GRB-111
:809094-07	93		Method Blank	6.27	0.100			59		100				09/22/08	09/23	GRB-112
:809094-08	93		Duplicate (R809094-03)	1.95	0.109			0		100			18	09/22/08	09/23	GRB-114
lominal values and limits from method				10.0	0.100			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 FOR 8 SAMPLES
MDA 3.32 ± 4.19
RESIDUE 15 ± 55

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test 93B Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
reparation batch 6160-167						
309094-01	93		7893-001	J17H45	U	
309094-02	93		7893-002	J17H46	U	
309094-03	93		7893-003	J17H47	U	
309094-04	93		7893-004	J17H48	U	
309094-05	93		7893-005	J17H49	U	
809094-06	93		7893-006	Lab Control Sample	ok	
809094-07	93		7893-007	Method Blank	U	
809094-08	93		7893-008	Duplicate (R809094-03)	-	U

ominal values and limits from method RDLs (pCi/mL) 15.0
18-7 Burial Ground-Other Liquid

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-167			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 167													
809094-01	93		J17H45	5.05	0.110			0		100			18	09/22/08	09/23	GRB-105
809094-02	93		J17H46	7.66	0.110			0		100			18	09/22/08	09/23	GRB-107
809094-03	93		J17H47	5.73	0.109			0		100			18	09/22/08	09/23	GRB-108
809094-04	93		J17H48	4.72	0.110			0		100			18	09/22/08	09/23	GRB-109
809094-05	93		J17H49	5.45	0.101			0		100			18	09/22/08	09/23	GRB-110
809094-06	93		Lab Control Sample	5.87	0.100			59		100				09/22/08	09/23	GRB-111
809094-07	93		Method Blank	6.06	0.100			59		100				09/22/08	09/23	GRB-112
809094-08	93		Duplicate (R809094-03)	6.48	0.109			0		100			18	09/22/08	09/23	GRB-114
Nominal values and limits from method				15.0	0.100			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 FOR 8 SAMPLES
MDA 5.88 ± 1.82
RESIDUE 15 ± 55

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1327

Test GAM Matrix LIQUID
SDG 7893
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1327

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
:eparation batch 6160-167								
309094-01			7893-001	J17H45	U		U	
309094-02			7893-002	J17H46	U		U	
309094-03			7893-003	J17H47	U		U	
309094-04			7893-004	J17H48	U		U	
309094-05			7893-005	J17H49	U		U	
309094-06			7893-006	Lab Control Sample	ok		ok	
809094-07			7893-007	Method Blank	U		U	
809094-08			7893-008	Duplicate (R809094-03)	-	U	-	U
ominal values and limits from method 18-7 Burial Ground-Other Liquid				RDLs (pCi/mL)	0.050		0.050	

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-167 2σ prep error 7.0 % Reference Lab Notebook #6160, pg. 167																
809094-01			J17H45	0.050	101					489			17	09/15/08	09/22	JR,01,00
809094-02			J17H46	0.038	101					489			17	09/15/08	09/22	JR,02,00
809094-03			J17H47	0.056	101					489			17	09/15/08	09/22	JR,05,00
809094-04			J17H48	0.071	100					460			18	09/15/08	09/23	JR,08,00
809094-05			J17H49	0.089	100					460			18	09/15/08	09/23	JR,06,00
809094-06			Lab Control Sample	0.049	100					814				09/15/08	09/25	JR,02,00
809094-07			Method Blank	0.042	100					814				09/15/08	09/25	JR,05,00
809094-08			Duplicate (R809094-03)	0.042	101					461			18	09/15/08	09/23	JR,02,00
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 FOR 8 SAMPLES
MDA 0.055 ± 0.035
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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).

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

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.

SDG 7893
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

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.

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1327

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

SDG 7893
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1327

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'

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/26/08

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.

* Prepareation 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.

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

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.

7693 K1328

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-076	Page 1 of 1

Collector S. Deeter	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code	**Data Turnaround** 15 Days		
Project Designation 618-7 Burial Ground - Other	**Sampling Location** 618-7 Burial Ground (drums) K1327 (7893)		**SAF No.** RC-088
Ice Chest No. SML-461	**Field Logbook No.** EL-1395-13	**COA** RG61878500	**Method of Shipment** FedEx
Shipped To EBERLINE SERVICES LIONVILLE	**Offsite Property No.** A080338		**Bill of Lading/Air Bill No.** see OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS other liquid	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				RCF#	Drum#
Sample No. / Matrix * / Sample Date / Sample Time											
J17H45 / OTHER / 9/5/08 / 1350						X				J17H75	7139
J17H46 / OTHER / 9/5/08 / 1405						X				J17H76	7138
J17H47 / OTHER / 9/5/08 / 1415						X				J17H77	7146
J17H48 / OTHER / 9/5/08 / 1440						X				J17H78	7043
J17H49 / OTHER / 9/5/08 / 1450						X				J17H79	7040

9/5/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1630 9-5-08	Received By/Stored In	Date/Time 1630 9/5/08
Relinquished By/Removed From	Date/Time 1700 9/5/08	Received By/Stored In	Date/Time 1700 9/5/08
Relinquished By/Removed From	Date/Time 1200 SEP 10 2008	Received By/Stored In	Date/Time 1200 SEP 10 2008
Relinquished By/Removed From	Date/Time 1200 SEP 10 2008	Received By/Stored In FedEx	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In	Date/Time 09/11/08 09:05
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)
(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Hk 9/11/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 09/11/08 09:05 CoC No. RC-088-076, ~~086~~ JMY

Container I.D. No. SML-461 Requested TAT (Days) 15 P.O. Received Yes [ ] No [X]

INSPECTION

1 Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]

2 Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]

3 Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]

4 Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]

5 Packing material is: Wet [ ] Dry [X]

6 Number of samples in shipping container 5 Sample Matrix LIQUID

7 Number of containers per sample 1 (Or see CoC)

8 Samples are in correct container Yes [X] No [ ]

9 Paperwork agrees with samples? Yes [X] No [ ]

10 Samples have Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]

11 Samples are In good condition [X] 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 JMY Date 09/11/08 Time 10:15

Customer Sample No	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe
ALL SAMPLES	<60						

Ion Chamber Ser. No _____ Calibration date _____

Alpha Meter Ser. No _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 10 JUL 08

Form: SOP-02, 07-30-07

"over 55 years of quality nuclear services"

LvLI
LIONVILLE LABORATORY INC.

RECEIVED
OCT 2008

14 October 2008

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0809L091
SDG #	K1327
SAF #	RC-088
Date Received	9/11/08
# Samples	6
Matrix	OTHER
Volatiles	X
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager
d:\k1328.doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17H45	001 M1	OI	08LVG157	09/05/08	N/A	09/16/08
J17H46	002 M1	OI	08LVG158	09/05/08	N/A	09/17/08
J17H46	002 MS M1	OI	08LVG158	09/05/08	N/A	09/17/08
J17H46	002 MSD M1	OI	08LVG158	09/05/08	N/A	09/17/08
J17H47	003 M1	OI	08LVG158	09/05/08	N/A	09/17/08
J17H47	003 N1	OI	08LVG158	09/05/08	N/A	09/17/08
J17H48	004 M1	OI	08LVG158	09/05/08	N/A	09/17/08
J17H48	004 N1	OI	08LVG158	09/05/08	N/A	09/17/08
J17H49	005 M1	OI	08LVG158	09/05/08	N/A	09/17/08
J17HM8	006 M1	OI	08LVG158	09/05/08	N/A	09/17/08
LAB QC:						
VBLKGN	MB1	S	08LVG157	N/A	N/A	09/16/08
VBLKGN	MB1 BS	S	08LVG157	N/A	N/A	09/16/08
VBLKGP	MB1	S	08LVG158	N/A	N/A	09/17/08
VBLKGP	MB1 BS	S	08LVG158	N/A	N/A	09/17/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088
LVL #: 0809L091
SDG/SAF # K1327/RC-088

W.O. #: 60049-001-001-0001-00
Date Received: 09-11-2008

GC/MS VOLATILE

Six (6) oil samples were collected on 09-05-2008.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL Volatile target compounds on 09-16,17-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were analyzed within required holding time.
2. Non-target compounds were detected in these samples.
3. All samples required a medium level dilution with an additional 4-fold dilution due to sample matrix. Sample J17H48 required an additional 16-fold dilution due to sample matrix.
4. Two (2) of seventy (70) spike recoveries were outside acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blank was below the reporting limit for all target compounds.
7. All internal standard area and retention time criteria were met.

r:\group\data\2008\voa\tnu\0809-091cs2.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage.
All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 26 pages.

LvLI
LIONVILLE LABORATORY INC.

8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

9. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/22/08
Date

GLOSSARY

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closes internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

MP - **Missed Peak:** Manually added peak not found by automatic quan program.

PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.

RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.

SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.

PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

Volatiles by GC/MS, HSL List

Report Date: 09/18/08 15:21

RFW Batch Number: 0809L091 Client: WC-HANFORD RC-088 K1327 Work Order: 60049001001 Page: 1a

	Cust ID:	J17H45	J17H46	J17H46	J17H46	J17H47	J17H47
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	003
	Matrix:	OIL	OIL	OIL	OIL	OIL	OIL
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Level:	MED	MED	MED	MED	MED	MED REPREP
Surrogate Recovery	Toluene-d8	104 %	105 %	108 %	111 %	101 %	101 %
	Bromofluorobenzene	118 %	130 * %	134 * %	150 * %	128 * %	125 * %
	1,2-Dichloroethane-d4	84 %	85 %	88 %	78 %	82 %	80 %
		fl	fl	fl	fl	fl	fl
Chloromethane		5000 U	5000 U	72 %	80 %	5000 U	5000 U
Bromomethane		5000 U	5000 U	55 %	53 %	5000 U	5000 U
Vinyl Chloride		5000 U	5000 U	87 %	94 %	5000 U	5000 U
Chloroethane		5000 U	5000 U	38 * %	37 * %	5000 U	5000 U
Methylene Chloride		2500 U	630 J	101 %	96 %	2500 U	2500 U
Acetone		3100 J	2600 J	71 %	40 %	8500	9500
Carbon Disulfide		2500 U	2500 U	98 %	103 %	2500 U	2500 U
1,1-Dichloroethene		2500 U	2500 U	105 %	102 %	2500 U	2500 U
1,1-Dichloroethane		2500 U	2500 U	91 %	91 %	2500 U	2500 U
1,2-Dichloroethene (total)		2500 U	2500 U	95 %	100 %	2500 U	2500 U
Chloroform		2500 U	2500 U	93 %	92 %	2500 U	2500 U
1,2-Dichloroethane		2500 U	2500 U	86 %	77 %	2500 U	2500 U
2-Butanone		5000 U	5000 U	75 %	46 %	1800 J	2000 J
1,1,1-Trichloroethane		2500 U	2500 U	94 %	103 %	2500 U	2500 U
Carbon Tetrachloride		2500 U	2500 U	98 %	102 %	2500 U	2500 U
Bromodichloromethane		2500 U	2500 U	92 %	90 %	2500 U	2500 U
1,2-Dichloropropane		2500 U	2500 U	92 %	91 %	2500 U	2500 U
cis-1,3-Dichloropropene		2500 U	2500 U	106 %	105 %	2500 U	2500 U
Trichloroethene		2500 U	2500 U	97 %	100 %	2500 U	2500 U
Dibromochloromethane		2500 U	2500 U	105 %	92 %	2500 U	2500 U
1,1,2-Trichloroethane		2500 U	2500 U	96 %	81 %	2500 U	2500 U
Benzene		2500 U	2500 U	95 %	96 %	540 J	520 J
Trans-1,3-Dichloropropene		2500 U	2500 U	105 %	95 %	2500 U	2500 U
Bromoform		2500 U	2500 U	96 %	73 %	2500 U	2500 U
4-Methyl-2-pentanone		1000 J	5000 U	86 %	56 %	2100 J	2200 J
2-Hexanone		5000 U	5000 U	86 %	54 %	1600 J	1800 J
Tetrachloroethene		2500 U	2500 U	105 %	106 %	2500 U	2500 U
1,1,2,2-Tetrachloroethane		2500 U	2500 U	97 %	86 %	2500 U	2500 U
Toluene		2700	3300	106 %	111 %	5000	5100

*= Outside of EPA CLP QC limits.

000000007

Cust ID:	J17H45		J17H46		J17H46		J17H46		J17H47		J17H47	
RFW#:	001		002		002 MS		002 MSD		003		003	
Level:	MED		MED		MED		MED		MED		MED REPREP	
Chlorobenzene	2500	U	2500	U	97	%	98	%	2500	U	2500	U
Ethylbenzene	2500	U	2500	U	111	%	112	%	480	J	540	J
Styrene	2500	U	2500	U	111	%	111	%	2500	U	2500	U
Xylenes (total)	1500	J	3200		107	%	108	%	2700		2800	
cis-1,2-dichloroethene	2500	U	2500	U	93	%	98	%	2500	U	2500	U
trans-1,2-dichloroethene	2500	U	2500	U	96	%	101	%	2500	U	2500	U

*= Outside of EPA CLP QC limits.

000000000

Volatiles by GC/MS, HSL List

Report Date: 09/18/08 15:21

RFW Batch Number: 0809L091 Client: WC-HANFORD RC-088 K1327 Work Order: 60049001001 Page: 2a

	Cust ID:	J17H48	J17H48	J17H49	J17HM8	VBLKGN	VBLKGN BS
Sample Information	RFW#:	004	004	005	006	08LVG157-MB1	08LVG157-MB1
	Matrix:	OIL	OIL	OIL	OIL	SOIL	SOIL
	D.F.:	4.00	16.0	4.00	4.00	4.00	4.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Level:	MED	MED	MED	MED	MED	MED
			REPREP				
Surrogate Recovery	Toluene-d8	103 %	104 %	103 %	92 %	100 %	106 %
	Bromofluorobenzene	144 * %	119 %	115 %	112 %	105 %	116 %
	1,2-Dichloroethane-d4	83 %	85 %	84 %	78 %	87 %	88 %
		fl	fl	fl	fl	fl	fl
Chloromethane		5000 U	20000 U	5000 U	5000 U	5000 U	90 %
Bromomethane		5000 U	20000 U	5000 U	5000 U	5000 U	75 %
Vinyl Chloride		5000 U	20000 U	5000 U	5000 U	5000 U	99 %
Chloroethane		5000 U	20000 U	5000 U	5000 U	5000 U	56 %
Methylene Chloride		2500 U	10000 U	2500 U	2500 U	2500 U	103 %
Acetone		1600 J	20000 U	13000	10000	5000 U	116 %
Carbon Disulfide		2500 U	10000 U	2500 U	2500 U	2500 U	111 %
1,1-Dichloroethene		2500 U	10000 U	2500 U	2500 U	2500 U	120 %
1,1-Dichloroethane		2500 U	10000 U	2500 U	2500 U	2500 U	94 %
1,2-Dichloroethene (total)		2500 U	10000 U	2500 U	2500 U	2500 U	102 %
Chloroform		2500 U	10000 U	2500 U	2500 U	2500 U	96 %
1,2-Dichloroethane		2500 U	10000 U	2500 U	2500 U	2500 U	87 %
2-Butanone		5000 U	20000 U	5000 U	5000 U	5000 U	80 %
1,1,1-Trichloroethane		2500 U	10000 U	2500 U	2500 U	2500 U	98 %
Carbon Tetrachloride		2500 U	10000 U	2500 U	2500 U	2500 U	103 %
Bromodichloromethane		2500 U	10000 U	2500 U	2500 U	2500 U	95 %
1,2-Dichloropropane		2500 U	10000 U	2500 U	2500 U	2500 U	92 %
cis-1,3-Dichloropropene		2500 U	10000 U	2500 U	2500 U	2500 U	108 %
Trichloroethene		2500 U	10000 U	2500 U	2500 U	2500 U	103 %
Dibromochloromethane		2500 U	10000 U	2500 U	2500 U	2500 U	110 %
1,1,2-Trichloroethane		2500 U	10000 U	2500 U	2500 U	2500 U	99 %
Benzene		2500 U	10000 U	2500 U	2500 U	2500 U	98 %
Trans-1,3-Dichloropropene		2500 U	10000 U	2500 U	2500 U	2500 U	108 %
Bromoform		2500 U	10000 U	2500 U	2500 U	2500 U	105 %
4-Methyl-2-pentanone		5000 U	20000 U	5000 U	5000 U	5000 U	94 %
2-Hexanone		5000 U	20000 U	5000 U	5000 U	5000 U	109 %
Tetrachloroethene		2500 U	10000 U	2500 U	2500 U	2500 U	106 %
1,1,2,2-Tetrachloroethane		2500 U	10000 U	2500 U	2500 U	2500 U	93 %
Toluene		500 J	10000 U	760 J	1300 J	2500 U	108 %

*= Outside of EPA CLP QC limits.

000000009

Cust ID:	J17H48		J17H48		J17H49		J17HM8		VBLKGN		VBLKGN BS	
RFW#:	004		004		005		006		08LVG157-MB1		08LVG157-MB1	
Level:	MED		MED REPREP		MED		MED		MED		MED	
Chlorobenzene	2500	U	10000	U	2500	U	2500	U	2500	U	100	%
Ethylbenzene	670	J	10000	U	2500	U	2500	U	2500	U	110	%
Styrene	2500	U	10000	U	2500	U	2500	U	2500	U	118	%
Xylenes (total)	7700		7500	J	2500	U	810	J	2500	U	109	%
cis-1,2-dichloroethene	2500	U	10000	U	2500	U	2500	U	2500	U	100	%
trans-1,2-dichloroethene	2500	U	10000	U	2500	U	2500	U	2500	U	104	%

*= Outside of EPA CLP QC limits.

	Cust ID:	VBLKGP	VBLKGP BS
Sample Information	RFW#:	08LVG158-MB1	08LVG158-MB1
	Matrix:	SOIL	SOIL
	D.F.:	4.00	4.00
	Units:	ug/Kg	ug/Kg
	Level:	MED	MED

Surrogate Recovery	Toluene-d8	102	%	104	%
	Bromofluorobenzene	110	%	112	%
	1,2-Dichloroethane-d4	85	%	83	%

Chloromethane	5000	U	75	%
Bromomethane	5000	U	65	%
Vinyl Chloride	5000	U	84	%
Chloroethane	5000	U	77	%
Methylene Chloride	2500	U	97	%
Acetone	5000	U	121	%
Carbon Disulfide	2500	U	102	%
1,1-Dichloroethene	2500	U	108	%
1,1-Dichloroethane	2500	U	90	%
1,2-Dichloroethene (total)	2500	U	99	%
Chloroform	2500	U	92	%
1,2-Dichloroethane	2500	U	85	%
2-Butanone	5000	U	74	%
1,1,1-Trichloroethane	2500	U	94	%
Carbon Tetrachloride	2500	U	97	%
Bromodichloromethane	2500	U	92	%
1,2-Dichloropropane	2500	U	92	%
cis-1,3-Dichloropropene	2500	U	106	%
Trichloroethene	2500	U	97	%
Dibromochloromethane	2500	U	105	%
1,1,2-Trichloroethane	2500	U	96	%
Benzene	2500	U	95	%
Trans-1,3-Dichloropropene	2500	U	106	%
Bromoform	2500	U	98	%
4-Methyl-2-pentanone	5000	U	89	%
2-Hexanone	5000	U	89	%
Tetrachloroethene	2500	U	103	%
1,1,2,2-Tetrachloroethane	2500	U	93	%
Toluene	2500	U	106	%

*= Outside of EPA CLP QC limits.

000000011

Cust ID:	VBLKGP		VBLKGP BS	
RFW#:	08LVG158-MB1		08LVG158-MB1	
Level:	MED		MED	
Chlorobenzene	2500	U	96	%
Ethylbenzene	2500	U	108	%
Styrene	2500	U	113	%
Xylenes (total)	2500	U	107	%
cis-1,2-dichloroethene	2500	U	97	%
trans-1,2-dichloroethene	2500	U	100	%

*= Outside of EPA CLP QC limits.

000000012

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17H45

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-001

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091619

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/16/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	23.196	20000	J
2.	UNKNOWN	25.204	40000	J
3.	DIMETHYLNAPHTHALENE	27.473	40000	J
4.	DIMETHYLNAPHTHALENE	27.893	40000	J
5.	DIMETHYLNAPHTHALENE	28.014	40000	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17H46

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-002

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091707

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	TERPENE	19.205	20000	J
2.	TERPENE	20.106	20000	J
3.	UNKNOWN	23.196	20000	J
4.	UNKNOWN	25.204	20000	J
5.	DIMETHYLNAPHTHALENE	27.893	10000	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17H47

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-003

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091708

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	23.196	10000	J
2.	UNKNOWN	25.210	30000	J
3.	DIMETHYLNAPHTHALENE	27.473	20000	J
4.	DIMETHYLNAPHTHALENE	27.899	30000	J
5.	DIMETHYLNAPHTHALENE	28.014	20000	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17H47RE

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-003

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091716

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	23.196	10000	J
2.	UNKNOWN	25.210	30000	J
3.	DIMETHYLNAPHTHALENE	27.473	30000	J
4.	DIMETHYLNAPHTHALENE	27.893	30000	J
5.	DIMETHYLNAPHTHALENE	28.014	40000	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17H48

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-004

Sample wt/vol: 1.00 (g/mL) G Lab File ID: q091709

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	C3-ALKYLBENZENE	19.911	50000	J
2.	TRIMETHYLBENZENE	20.020	30000	J
3.	TRIMETHYLBENZENE	20.483	90000	J
4.	C3-ALKYLBENZENE	20.963	60000	J
5.	UNKNOWN	21.207	30000	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17H48RE

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-004

Sample wt/vol: 1.00 (g/mL) G Lab File ID: q091717

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 16.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	TRIMETHYLBENZENE	20.483	100000	J
2.	C3-ALKYLBENZENE	20.964	60000	J
3.	DIMETHYLNAPHTHALENE	27.473	100000	J
4.	DIMETHYLNAPHTHALENE	27.899	100000	J
5.	DIMETHYLNAPHTHALENE	28.008	100000	J

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17H49

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-005

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091710

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	25.210	10000	J
2.	UNKNOWN	27.114	10000	J
3.	DIMETHYLNAPHTHALENE	27.473	20000	J
4.	DIMETHYLNAPHTHALENE	27.893	20000	J
5.	DIMETHYLNAPHTHALENE	28.014	20000	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J17HM8

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) OIL Lab Sample ID: 0809L091-006

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091711

Level: (low/med) MED Date Received: 09/11/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	TERPENE	19.205	10000	J
2.	TERPENE	20.106	8000	J
3.	UNKNOWN	25.204	10000	J
4.	UNKNOWN	27.114	10000	J
5.	DIMETHYLNAPHTHALENE	27.893	20000	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKGN

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 08LVG157-MB1

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091606

Level: (low/med) MED Date Received: 09/15/08

% Moisture: not dec. 0 Date Analyzed: 09/16/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKGP

Lab Name: Lionville Labs, Inc. Contract: 60049001001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 08LVG158-MB1

Sample wt/vol: 1.00 (g/mL) G Lab File ID: g091706

Level: (low/med) MED Date Received: 09/17/08

% Moisture: not dec. 0 Date Analyzed: 09/17/08

Column: (pack/cap) CAP Dilution Factor: 4.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

Lionville Laboratory Use Only

08091091

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: W.C. Hanford SAFH RC-088

Est. Final Proj. Sampling Date:

Project#: 60049-001-001-0001-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. Johnson

QC: SW846 Del: STD TAT: 7Day

Date Rec'd: 9-11-08 Date Due: 9-18-08

Refrigerator #		A	B
#/Type Container	Liquid	1G	1G
	Solid		
Volume		40	250
Preservatives		—	

ANALYSES REQUESTED →

ORGANIC				INORG			
VOA	BNA	~~Pest~~/PCB	Herb	TPH	Metal	Hg	CN

Lionville Laboratory Use Only

MATRIX CODES:
S- Soil
SE- Sediment
SO- Solid
SL- Sludge
W- Water
O- Oil
A- Air
DS- Drum Solids
DL- Drum Liquids
L- EP/TCLP Leachate
WI- Wipe
X- Other
F- Fish

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	8624H	8625H	OPCB					Met①		ISOTN				
001	J17H45			OIL	9-5-08	1350	X	X	X					X		X				
002	46					1405	X	X	X					X		X				
003	47					1415	X	X	X					X		X				
004	48					1440	X	X	X					X		X				
005	49					1450	X	X	X					X		X				
006	J17HM8					1500	X	X	X					X		X				

Special Instructions: Run Matrix Qc

Met① = HSL + Sn, Zr

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Ed Ec	[signature]	9/11/08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

0000000023

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-076	Page 1 of 1

Collector S. Deeter	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code	Data Turnaround ~~15~~ 7 Days JTD 9/5/08		
Project Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Ice Chest No. AFS-04-053	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment FedEx
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080348		Bill of Lading/Air Bill No. see OSPC

000000024

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				RCF#	Drum #
Sample No. / Matrix * / Sample Date / Sample Time											
J17H45 / OTHER / 9/5/08 / 1350	X	X	X	X	X					J17H75	7139
J17H46 / OTHER / 9/5/08 / 1405	X	X	X	X	X					J17H76	7138
J17H47 / OTHER / 9/5/08 / 1415	X	X	X	X	X					J17H77	7146
J17H48 / OTHER / 9/5/08 / 1440	X	X	X	X	X					J17H78	7043
J17H49 / OTHER / 9/5/08 / 1450	X	X	X	X	X					J17H79	7040

JTD 9/5/08

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: S DEETER 9-5-08 Date/Time 1650	Received By/Stored In: JR DeBruijne 9-5-08 Date/Time 1650
Relinquished By/Removed From: JR DeBruijne 9/5/08 Date/Time 1700	Received By/Stored In: 1060 JB 9/5/08 Date/Time 1700
Relinquished By/Removed From: 1060/JB Date/Time 1200 SEP 10 2008	Received By/Stored In: M Stankovich Date/Time 1200 SEP 10 2008
Relinquished By/Removed From: WCH M Stankovich Date/Time 1200 SEP 10 2008	Received By/Stored In: FedEx Date/Time
Relinquished By/Removed From: EC 9-11-08 Date/Time 0930	Received By/Stored In: 9-11-08 Date/Time 0930
Relinquished By/Removed From: Date/Time	Received By/Stored In: Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JTD

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By.	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-086	Page 1 of 1

Collector: S. Deeter	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code	Data Turnaround: 15 Days 7		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1395-13	COA: RG61878500	Method of Shipment: Fed Ex JRD 9/5/08
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080348		Bill of Lading/Air Bill No.: see aspc

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				RCF #	Drum #
Sample No.	Matrix *	Sample Date	Sample Time								
J17HM8	OTHER	9/5/08	1500	X	X	X	X	X		J17HN8	7046
J17HM9	OTHER										
J17HN0	OTHER										
J17HN1	OTHER										
J17HN2	OTHER										

9/5/08 JRD

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: S DEETER	9-5-08 1630	JR DeBruigne JRD	9/5/08 1630
Relinquished By/Removed From: JR DeBruigne JRD	9/5/08 1700	1060 JB	9/5/08 1700
Relinquished By/Removed From: 1060/JB	SEP 10 2008 1200	MLL MStankovich	SEP 10 2008 1200
Relinquished By/Removed From: MLL MStankovich	SEP 10 2008 1200	Fed Ex	
Relinquished By/Removed From: Fed Ex	9-11-08 0930	[illegible]	9-11-08 0930
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

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

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

WCH-EE-011

000000025

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford
Project/SAF/SOW/Release #: RC-088

Date: 9/11/06

LvLI Batch #: 0809L091

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 0883 3003
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-8	°C	Cooler # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17H45	001	OI	08LE0433	09/05/08	09/12/08	09/16/08
J17H45	001 MS	OI	08LE0433	09/05/08	09/12/08	09/16/08
J17H45	001 MSD	OI	08LE0433	09/05/08	09/12/08	09/16/08
J17H46	002	OI	08LE0433	09/05/08	09/12/08	09/16/08
J17H47	003	OI	08LE0433	09/05/08	09/12/08	09/21/08
J17H48	004	OI	08LE0433	09/05/08	09/12/08	09/21/08
J17H49	005	OI	08LE0433	09/05/08	09/12/08	09/22/08
J17HM8	006	OI	08LE0433	09/05/08	09/12/08	09/22/08

LAB QC:

SBLKXP	MB1	OI	08LE0433	N/A	09/12/08	09/12/08
SBLKXP	MB1 BS	OI	08LE0433	N/A	09/12/08	09/12/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088 K1327
LVL #: 0809L091

W.O. #: 60049-001-001-0001-00
Date Received: 09-11-2008

SEMIVOLATILE

Six (6) oil samples were collected on 09-05-2008.

The samples and associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3580A (Waste Dilution Protocol, 1g into 10mL DCM and/or 1g into 20 mL DCM) on 09-12-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 09-12,16,21,22-2008.

The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. The samples were extracted and analyzed within the recommended holding time.

2. Non-target compounds were detected in these samples.

3. All samples had a 10-fold dilution at the extraction level and an adjusted final volume of 2.1 ml resulting in a 21-fold dilution factor; with the exception of sample J17HM8 which had a 20-fold dilution at the extraction level resulting in a 42-fold dilution. Due to the oily matrix and chromatographic anomalies the following samples required a 5-fold instrument dilution: J17H45, J17H45 MS, J17H45 MSD, J17H46, J17H47 and J17H48. Reporting limits have been adjusted to reflect the necessary dilutions.

4. All obtainable surrogate recoveries were within acceptance criteria.

5. Sixteen (16) of one hundred twenty-eight (128) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS210) has been enclosed.

6. All blank spike recoveries were within acceptance criteria.

7. The method blank was below the reporting limits for all target compounds.

8. All initial calibrations associated with this data set were within acceptance criteria.

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 22 pages.
r:\group\data\2008\bna\wc-hanford\0809-091ojoil2.doc

LIONVILLE LABORATORY INC.

10. Internal standard area and retention time criteria were not met for samples J17H45 MSD, J17H47 and J17H48. The analysis of samples J17H45 and J17H45 MS fulfills the reanalysis requirement for sample J17H45 MSD. The probable cause is due to a matrix effect (hydrocarbon contamination); there is presence of a large unresolved chromatographic peak between 16 – 17 minutes making the detection and quantitation of target compounds within this peak difficult. The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits.

11. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

12. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/9/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0PMS210

Initiator: Shawn Saylor
Date: 9-24-08
Client: WC Hanford PL0880 R1327

Batch: 0F09L091
Samples: ms, msd, BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: ~~Solid~~ oil TESS9.2
Prep Batch: 08LE0433

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error __ Client Request __ Sampler Error on C-O-C
__ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy
__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

no recovery of 2,4-dinitrophenol in the ms, & msd but BS is ok

2. Known or Probable Causes(s) Cmpl diluted out (5x instrument dilution) hydrocarbon contamination, large unresolved chromatographic peak btn 16-27 minutes making detection and quantitation of target cmpds within this peak difficult

3. Discussion and Proposed Action Other Description: narrate

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: _____ 9/24/08
__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
✓ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: _____ Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA for diposition.

Route
__ Lab Manager: Daniels
1 Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
2 MS BNA: Carden / _____
__ Other: _____

GLOSSARY

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: manually added peak not found by automatic quan program.

PA - Peak Assignment: quan report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 09/26/08 10:58

RFW Batch Number: 0809L091 Client: WC-HANFORD RC-088 K1327 Work Order: 60049001001 Page: 1a

	Cust ID:	J17H45	J17H45	J17H45	J17H46	J17H47	J17H48
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	OIL	OIL	OIL	OIL	OIL	OIL
	D.F.:	105	105	105	105	105	105
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	92 %	105 %	115 %	106 %	96 %	109 %
	2-Fluorobiphenyl	83 %	106 %	109 %	98 %	104 %	108 %
	Terphenyl-d14	85 %	114 %	119 %	107 %	102 %	108 %
	Phenol-d5	86 %	107 %	103 %	95 %	86 %	101 %
	2-Fluorophenol	81 %	98 %	89 %	87 %	98 %	102 %
	2,4,6-Tribromophenol	71 %	119 %	120 %	84 %	89 %	97 %
		fl	fl	fl	fl	fl	fl
Phenol		1000000 U	108 %	112 %	1000000 U	1000000 U	1000000 U
bis(2-Chloroethyl)ether		1000000 U	124 %	145 * %	1000000 U	1000000 U	1000000 U
2-Chlorophenol		1000000 U	102 %	104 %	1000000 U	1000000 U	1000000 U
1,3-Dichlorobenzene		1000000 U	103 %	102 %	1000000 U	1000000 U	1000000 U
1,4-Dichlorobenzene		1000000 U	100 %	103 %	1000000 U	1000000 U	1000000 U
1,2-Dichlorobenzene		1000000 U	106 %	114 * %	1000000 U	1000000 U	1000000 U
2-Methylphenol		1000000 U	121 * %	125 * %	1000000 U	1000000 U	1000000 U
2,2'-oxybis(1-Chloropropane)		1000000 U	129 * %	136 * %	1000000 U	1000000 U	1000000 U
3/4 Methylphenol		1000000 U	106 %	118 %	1000000 U	1000000 U	1000000 U
N-Nitroso-di-n-propylamine		1000000 U	144 * %	144 * %	1000000 U	1000000 U	1000000 U
Hexachloroethane		1000000 U	104 %	109 %	1000000 U	1000000 U	1000000 U
Nitrobenzene		1000000 U	99 %	108 %	1000000 U	1000000 U	1000000 U
Isophorone		1000000 U	107 %	115 %	1000000 U	1000000 U	1000000 U
2-Nitrophenol		1000000 U	103 %	97 %	1000000 U	1000000 U	1000000 U
2,4-Dimethylphenol		1000000 U	111 %	130 * %	1000000 U	1000000 U	1000000 U
bis(2-Chloroethoxy)methane		1000000 U	123 %	132 %	1000000 U	1000000 U	1000000 U
2,4-Dichlorophenol		1000000 U	94 %	90 %	1000000 U	1000000 U	1000000 U
1,2,4-Trichlorobenzene		1000000 U	100 %	103 %	1000000 U	1000000 U	1000000 U
Naphthalene		1000000 U	106 %	110 %	1000000 U	1000000 U	1000000 U
4-Chloroaniline		1000000 U	101 %	104 %	1000000 U	1000000 U	1000000 U
Hexachlorobutadiene		1000000 U	106 %	122 %	1000000 U	1000000 U	1000000 U
4-Chloro-3-methylphenol		1000000 U	99 %	136 * %	1000000 U	1000000 U	1000000 U
2-Methylnaphthalene		53000 J	105 * %	113 * %	1000000 U	1000000 U	1000000 U
Hexachlorocyclopentadiene		1000000 U	35 %	27 %	1000000 U	1000000 U	1000000 U
2,4,6-Trichlorophenol		1000000 U	100 %	108 %	1000000 U	1000000 U	1000000 U
2,4,5-Trichlorophenol		2600000 U	113 %	110 %	2600000 U	2600000 U	2600000 U

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J17H45	J17H45	J17H45	J17H46	J17H47	J17H48
RFW#:	001	001 MS	001 MSD	002	003	004
2-Chloronaphthalene	1000000 U	101 %	103 %	1000000 U	1000000 U	1000000 U
2-Nitroaniline	2600000 U	111 %	131 * %	2600000 U	2600000 U	2600000 U
Dimethylphthalate	1000000 U	120 %	125 %	1000000 U	1000000 U	1000000 U
Acenaphthylene	1000000 U	99 %	105 %	1000000 U	1000000 U	1000000 U
2,6-Dinitrotoluene	1000000 U	96 %	97 %	1000000 U	1000000 U	1000000 U
3-Nitroaniline	2600000 U	117 %	88 %	2600000 U	2600000 U	2600000 U
Acenaphthene	1000000 U	96 %	104 %	1000000 U	1000000 U	1000000 U
2,4-Dinitrophenol	2600000 U	D %	D %	2600000 U	2600000 U	2600000 U
4-Nitrophenol	2600000 U	118 %	168 * %	2600000 U	2600000 U	2600000 U
Dibenzofuran	1000000 U	98 %	113 %	1000000 U	1000000 U	1000000 U
2,4-Dinitrotoluene	1000000 U	133 * %	138 * %	1000000 U	1000000 U	1000000 U
Diethylphthalate	1000000 U	115 %	126 %	1000000 U	1000000 U	1000000 U
4-Chlorophenyl-phenylether	1000000 U	112 %	120 %	1000000 U	1000000 U	1000000 U
Fluorene	120000 J	84 %	88 %	140000 J	1000000 U	100000 J
4-Nitroaniline	2600000 U	86 %	64 %	2600000 U	2600000 U	2600000 U
4,6-Dinitro-2-methylphenol	2600000 U	73 %	50 %	2600000 U	2600000 U	2600000 U
N-Nitrosodiphenylamine (1)	1000000 U	110 %	107 %	1000000 U	1000000 U	1000000 U
4-Bromophenyl-phenylether	1000000 U	109 %	116 %	1000000 U	1000000 U	1000000 U
Hexachlorobenzene	1000000 U	112 %	119 %	1000000 U	1000000 U	1000000 U
Pentachlorophenol	2600000 U	73 %	78 %	2600000 U	2600000 U	2600000 U
Phenanthrene	160000 J	91 %	98 %	260000 J	190000 J	290000 J
Anthracene	1000000 U	89 %	92 %	1000000 U	1000000 U	1000000 U
Carbazole	1000000 U	82 %	95 %	1000000 U	1000000 U	1000000 U
Di-n-butylphthalate	1000000 U	101 %	109 %	1000000 U	1000000 U	1000000 U
Fluoranthene	1000000 U	96 %	109 %	1000000 U	1000000 U	1000000 U
Pyrene	1000000 U	110 %	96 %	1000000 U	1000000 U	1000000 U
Butylbenzylphthalate	1000000 U	100 %	97 %	1000000 U	1000000 U	1000000 U
3,3'-Dichlorobenzidine	1000000 U	110 %	120 %	1000000 U	1000000 U	1000000 U
Benzo(a)anthracene	1000000 U	86 %	94 %	1000000 U	1000000 U	1000000 U
Chrysene	1000000 U	87 %	98 %	1000000 U	1000000 U	1000000 U
bis(2-Ethylhexyl)phthalate	1000000 U	89 %	92 %	1000000 U	1000000 U	1000000 U
Di-n-octyl phthalate	1000000 U	83 %	79 %	1000000 U	1000000 U	1000000 U
Benzo(b)fluoranthene	1000000 U	87 %	87 %	1000000 U	1000000 U	1000000 U
Benzo(k)fluoranthene	1000000 U	82 %	85 %	1000000 U	1000000 U	1000000 U
Benzo(a)pyrene	1000000 U	82 %	85 %	1000000 U	1000000 U	1000000 U
Indeno(1,2,3-cd)pyrene	1000000 U	78 %	87 %	1000000 U	1000000 U	1000000 U
Dibenz(a,h)anthracene	1000000 U	81 %	91 %	1000000 U	1000000 U	1000000 U
Benzo(g,h,i)perylene	1000000 U	79 %	93 %	1000000 U	1000000 U	1000000 U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

600000000

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 09/26/08 10:58

RFW Batch Number: **0809L091** Client: **WC-HANFORD RC-088 K1327** Work Order: 60049001001 Page: 2a

000000010

	Cust ID:	J17H49		J17HM8		SBLKXP		SBLKXP BS	
Sample Information	RFW#:	005		006		08LE0433-MB1		08LE0433-MB1	
	Matrix:	OIL		OIL		OIL		OIL	
	D.F.:	21.0		42.0		21.0		21.0	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	97	%	102	%	84	%	92	%
	2-Fluorobiphenyl	110	%	105	%	94	%	88	%
	Terphenyl-d14	109	%	119	%	92	%	102	%
	Phenol-d5	86	%	90	%	82	%	95	%
	2-Fluorophenol	90	%	102	%	91	%	95	%
	2,4,6-Tribromophenol	57	%	63	%	90	%	99	%
Phenol		210000	U	420000	U	210000	U	87	%
bis(2-Chloroethyl)ether		210000	U	420000	U	210000	U	107	%
2-Chlorophenol		210000	U	420000	U	210000	U	86	%
1,3-Dichlorobenzene		210000	U	420000	U	210000	U	91	%
1,4-Dichlorobenzene		210000	U	420000	U	210000	U	96	%
1,2-Dichlorobenzene		210000	U	420000	U	210000	U	93	%
2-Methylphenol		210000	U	420000	U	210000	U	92	%
2,2'-oxybis(1-Chloropropane)		210000	U	420000	U	210000	U	109	%
3/4 Methylphenol		210000	U	420000	U	210000	U	84	%
N-Nitroso-di-n-propylamine		210000	U	420000	U	210000	U	110	%
Hexachloroethane		210000	U	420000	U	210000	U	94	%
Nitrobenzene		210000	U	420000	U	210000	U	86	%
Isophorone		210000	U	420000	U	210000	U	85	%
2-Nitrophenol		210000	U	420000	U	210000	U	77	%
2,4-Dimethylphenol		210000	U	420000	U	210000	U	99	%
bis(2-Chloroethoxy)methane		210000	U	420000	U	210000	U	101	%
2,4-Dichlorophenol		210000	U	420000	U	210000	U	90	%
1,2,4-Trichlorobenzene		210000	U	420000	U	210000	U	84	%
Naphthalene		210000	U	420000	U	210000	U	88	%
4-Chloroaniline		210000	U	420000	U	210000	U	84	%
Hexachlorobutadiene		210000	U	420000	U	210000	U	87	%
4-Chloro-3-methylphenol		210000	U	420000	U	210000	U	90	%
2-Methylnaphthalene		210000	U	420000	U	210000	U	93	%
Hexachlorocyclopentadiene		210000	U	420000	U	210000	U	77	%
2,4,6-Trichlorophenol		210000	U	420000	U	210000	U	88	%
2,4,5-Trichlorophenol		520000	U	1000000	U	520000	U	92	%

*= Outside of EPA CLP QC limits.

Cust ID:	J17H49		J17HM8		SBLKXP		SBLKXP BS	
RFW#:	005		006		08LE0433-MB1		08LE0433-MB1	
2-Chloronaphthalene	210000	U	420000	U	210000	U	85	%
2-Nitroaniline	520000	U	1000000	U	520000	U	86	%
Dimethylphthalate	210000	U	420000	U	210000	U	99	%
Acenaphthylene	210000	U	420000	U	210000	U	89	%
2,6-Dinitrotoluene	210000	U	420000	U	210000	U	84	%
3-Nitroaniline	520000	U	1000000	U	520000	U	77	%
Acenaphthene	210000	U	420000	U	210000	U	87	%
2,4-Dinitrophenol	520000	U	1000000	U	520000	U	77	%
4-Nitrophenol	520000	U	1000000	U	520000	U	72	%
Dibenzofuran	210000	U	420000	U	210000	U	90	%
2,4-Dinitrotoluene	210000	U	420000	U	210000	U	89	%
Diethylphthalate	210000	U	420000	U	210000	U	99	%
4-Chlorophenyl-phenylether	210000	U	420000	U	210000	U	96	%
Fluorene	210000	U	420000	U	210000	U	87	%
4-Nitroaniline	520000	U	1000000	U	520000	U	72	%
4,6-Dinitro-2-methylphenol	520000	U	1000000	U	520000	U	95	%
N-Nitrosodiphenylamine (1)	210000	U	420000	U	210000	U	88	%
4-Bromophenyl-phenylether	210000	U	420000	U	210000	U	87	%
Hexachlorobenzene	210000	U	420000	U	210000	U	87	%
Pentachlorophenol	520000	U	1000000	U	520000	U	117	%
Phenanthrene	210000	U	420000	U	210000	U	94	%
Anthracene	210000	U	420000	U	210000	U	95	%
Carbazole	210000	U	420000	U	210000	U	86	%
Di-n-butylphthalate	210000	U	420000	U	210000	U	109	%
Fluoranthene	210000	U	420000	U	210000	U	96	%
Pyrene	210000	U	420000	U	210000	U	92	%
Butylbenzylphthalate	210000	U	420000	U	210000	U	115	%
3,3'-Dichlorobenzidine	210000	U	420000	U	210000	U	82	%
Benzo(a)anthracene	210000	U	420000	U	210000	U	88	%
Chrysene	210000	U	420000	U	210000	U	92	%
bis(2-Ethylhexyl)phthalate	210000	U	420000	U	210000	U	104	%
Di-n-octyl phthalate	210000	U	420000	U	210000	U	106	%
Benzo(b)fluoranthene	210000	U	420000	U	210000	U	82	%
Benzo(k)fluoranthene	210000	U	420000	U	210000	U	84	%
Benzo(a)pyrene	210000	U	420000	U	210000	U	83	%
Indeno(1,2,3-cd)pyrene	210000	U	420000	U	210000	U	82	%
Dibenz(a,h)anthracene	210000	U	420000	U	210000	U	84	%
Benzo(g,h,i)perylene	210000	U	420000	U	210000	U	84	%

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

000000011

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17H45

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1327

Matrix: (soil/water) OIL

Lab Sample ID: 0809L091-001

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: N091516

Level: (low/med) LOW

Date Received: 09/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 09/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 105

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	14.385	2000000	J
2.	ALKANE	15.332	2000000	J
3.	UNKNOWN	16.570	2000000	J
4.	TRIMETHYLNAPHTHALENE	16.954	1000000	J
5.	PAH	22.046	2000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17H46

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1327

Matrix: (soil/water) OIL

Lab Sample ID: 0809L091-002

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: D091611

Level: (low/med) LOW

Date Received: 09/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 09/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 105

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.341	2000000	J
2.	TRIMETHYLNAPHTHALENE	18.727	3000000	J
3.	TRIMETHYLNAPHTHALENE	18.903	3000000	J
4.	TRIMETHYLNAPHTHALENE	19.237	2000000	J
5.	PAH	19.965	2000000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17H47

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1327

Matrix: (soil/water) OIL

Lab Sample ID: 0809L091-003

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: D092112

Level: (low/med) LOW

Date Received: 09/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 09/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/21/08

Injection Volume: 2.0(uL)

Dilution Factor: 105

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	16.543	1000000	J
2.	TRIMETHYLNAPHTHALENE	18.148	2000000	J
3.	TRIMETHYLNAPHTHALENE	18.353	2000000	J
4.	TRIMETHYLNAPHTHALENE	18.690	1000000	J
5.	PAH	23.476	2000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17H48

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1327

Matrix: (soil/water) OIL

Lab Sample ID: 0809L091-004

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: D092113

Level: (low/med) LOW

Date Received: 09/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 09/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/21/08

Injection Volume: 2.0(uL)

Dilution Factor: 105

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	17.051	2000000	J
2.	TRIMETHYLNAPHTHALENE	18.350	3000000	J
3.	TRIMETHYLNAPHTHALENE	18.697	2000000	J
4.	PAH	19.239	2000000	J
5.	ALKANE	19.291	2000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17H49

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1327

Matrix: (soil/water) OIL

Lab Sample ID: 0809L091-005

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: D092210

Level: (low/med) LOW

Date Received: 09/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 09/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/22/08

Injection Volume: 2.0(uL)

Dilution Factor: 21.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.074	70000	J
2.	UNKNOWN	7.666	800000	J
3.	UNKNOWN	16.501	70000	J
4.	TRIMETHYLNAPHTHALENE	18.311	60000	J
5.	TRIMETHYLNAPHTHALENE	18.659	60000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17HM8

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1327

Matrix: (soil/water) OIL

Lab Sample ID: 0809L091-006

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: D092211

Level: (low/med) LOW

Date Received: 09/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 09/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/22/08

Injection Volume: 2.0(uL)

Dilution Factor: 42.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.660	1000000	J
2.	UNKNOWN	29.063	90000	J
3.	UNKNOWN	34.228	100000	J
4.	UNKNOWN	39.494	90000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKXP

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1327

Matrix: (soil/water) OIL

Lab Sample ID: 08LE0433-MB1

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: C091209

Level: (low/med) LOW

Date Received: 09/12/08

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 09/12/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/12/08

Injection Volume: 2.0(uL)

Dilution Factor: 21.0

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 SV-TIC

RFW (v3.3)

Lionville Laboratory Use Only

28091091

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000019

Client: W.C. Hanford SAFH RC-088

Est. Final Proj. Sampling Date:

Project#: 60049-001-001-0001-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. Johnson

SW846 Del STD TAT 7 Day

Date Rec'd: 9-11-08 Date Due: 9-18-08

		A	B
Refrigerator #			
#/Type Container	Liquid	1G	1G
	Solid		
Volume		40	250
Preservatives		—	

ANALYSES REQUESTED →

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	~~Pest~~/PCB	Herb				Metal		CN					
							ORGANIC							INORG							
							Lionville Laboratory Use Only														
							06244	06254	OPCB					Met①			I-TGN				
001	J17H45			OIL	9-5-08	1350	X	X	X					X			X				
002	46					1405	X	X	X					X			X				
003	47					1415	X	X	X					X			X				
004	48					1440	X	X	X					X			X				
005	49					1450	X	X	X					X			X				
006	J17HM8					1500	X	X	X					X			X				

Matrix Codes: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

Special Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
		9/11/08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-076	Page 1 of 1

Collector S. Deeter	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code	Data Turnaround ~~15~~ 7 Days JRD 9/5/08		
Project Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Ice Chest No. AFS-04-053	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment FedEx
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080348		Bill of Lading/Air Bill No. see OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				RCF#	Drum #
Sample No.	Matrix *	Sample Date	Sample Time								
J17H45	OTHER	9/5/08	1350	X	X	X	X	X		J17H75	7139
J17H46	OTHER	9/5/08	1405	X	X	X	X	X		J17H76	7138
J17H47	OTHER	9/5/08	1415	X	X	X	X	X		J17H77	7146
J17H48	OTHER	9/5/08	1440	X	X	X	X	X		J17H78	7043
J17H49	OTHER	9/5/08	1450	X	X	X	X	X		J17H79	7040

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SDEETER	1650 9-5-08	JRDeBruine TODeBruine	1630 9-5-08
JRDeBruine TODeBruine	1700 9/5/08	1060 IB	1700 9/5/08
1060/IB	1200 SEP 10 2008	MStankovich	1200 SEP 10 2008
MStankovich	1200 SEP 10 2008	FedEx	
FedEx	9-11-08 0930		9-11-08 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

VCH-EE-011

000000020

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-086	Page 1 of 1

Collector S. Deeter	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code	Data Turnaround ~~15~~ 7 Days		
Project Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Ice Chest No. AFS-04-053	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment Fed Ex JRD 9/5/08
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080348		Bill of Lading/Air Bill No. see aspx

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. 9/5/08				RCF #	Drum #
Sample No.	Matrix *	Sample Date	Sample Time								
117HM8	OTHER	9/5/08	1500	X	X	X	X	X		J17HN8	7046
117HM9	OTHER										
117HN0 9/5/08	OTHER										
117HN1 JRD	OTHER										
17HN2	OTHER										

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S DEETER	1630 9-5-08	JR DeBrigue JRD	1630 9/5/08
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JR DeBrigue JRD	1700 9/5/08	1000 IB	1700 9/5/08
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
1060/IB	1200 SEP 10 2008	MSHankovich	SEP 10 2008 1200
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
MSHankovich	1200 SEP 10 2008	Fed Ex	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	9-11-08 0930		9-11-08 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

Matrix *

S=Soil
SB=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

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

CH-EE-011

000000021

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford
Project/SAF/SOW/Release #: RC-088

Date: 9/11/06

LvLI Batch #: 08096091

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 0883 3003
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-8°	°C	Cooler # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI LIONVILLE LABORATORIES, INC.

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17H45	001	OI	08LE0438	09/05/08	09/15/08	09/19/08
J17H45	001 MS	OI	08LE0438	09/05/08	09/15/08	09/19/08
J17H45	001 MSD	OI	08LE0438	09/05/08	09/15/08	09/19/08
J17H46	002	OI	08LE0438	09/05/08	09/15/08	09/19/08
J17H47	003	OI	08LE0438	09/05/08	09/15/08	09/19/08
J17H48	004	OI	08LE0438	09/05/08	09/15/08	09/19/08
J17H49	005	OI	08LE0438	09/05/08	09/15/08	09/19/08
J17HM8	006	OI	08LE0438	09/05/08	09/15/08	09/19/08

LAB QC:

PBLKUP	MB1	S	08LE0438	N/A	09/15/08	09/17/08
PBLKUP	MB1 BS	S	08LE0438	N/A	09/15/08	09/17/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088 K1327
LVL #: 0809L091

W.O. #: 60049-001-001-0001-00
Date Received: 09-11-2008

PCB

Six (6) oil samples were collected on 09-05-2008.

The samples and their associated QC samples were extracted on 09-15-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-17,19-2008. The extraction procedure was based on method 3580A (waste dilution 1g into 10 mLs of Hexane) and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All samples were extracted and analyzed within hold time.
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

r:\group\data\2008\pest-pcb\tnu\0809-091ojoil2.pcb.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

LIONVILLE LABORATORY INC.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory

9/30/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

U	=	Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
J	=	Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
I	=	Interference.
. I	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 09/19/08 15:39

RFW Batch Number: **0809L091** Client: **WC-HANFORD RC-088 K1327** Work Order: 60049001001 Page: 1

0000000005

	Cust ID:	J17H45	J17H45	J17H45	J17H46	J17H47	J17H48
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	OIL	OIL	OIL	OIL	OIL	OIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	85 %	88 %	90 %	84 %	98 %	87 %
	Decachlorobiphenyl	89 %	94 %	95 %	84 %	98 %	91 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		400 U	90 %	91 %	400 U	400 U	400 U
Aroclor-1221		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1232		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1242		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1248		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1254		400 U	400 U	400 U	400 U	400 U	590
Aroclor-1260		400 U	86 %	89 %	400 U	400 U	400 U

	Cust ID:	J17H49	J17HM8	PBLKUP	PBLKUP BS
Sample Information	RFW#:	005	006	08LE0438-MB1	08LE0438-MB1
	Matrix:	OIL	OIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	106 %	100 %	89 %	107 %
	Decachlorobiphenyl	111 %	105 %	81 %	101 %
		fl	fl	fl	fl
Aroclor-1016		400 U	400 U	400 U	91 %
Aroclor-1221		400 U	400 U	400 U	400 U
Aroclor-1232		400 U	400 U	400 U	400 U
Aroclor-1242		400 U	400 U	400 U	400 U
Aroclor-1248		400 U	400 U	400 U	400 U
Aroclor-1254		400 U	400 U	400 U	400 U
Aroclor-1260		400 U	400 U	400 U	104 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/15/08 Extraction Batch No: 08LE0438 Analyst: MF Method: **** WD358

Test: OPCB Cleanup Date: 09/15/08 Analyst: MF Client: WC-HANFORD RC-088 K1326

LIMS Report Date: 09/16/08 Solvent: HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0809L054-	WC-HANFORD RC-088 K1326										
001	J17H35		1.0	1.0		10		1.0	N	0.0	10000
001 -S	J17H35		1.0	1.0	1.0	10		1.0	N	0.0	10000
001 -T	J17H35		1.0	1.0	1.0	10		1.0	N	0.0	10000
002	J17H36		1.0	1.0		10		1.0	N	0.0	10000
004	J17H38		1.0	1.0		10		1.0	N	0.0	10000
005	J17H39		1.0	1.0		10		1.0	N	0.0	10000
0809L076-	WC-HANFORD RC-088 K1322										
001	J178L4		1.0	1.0		10		1.0	N	0.0	10000
001 -S	J178L4		1.0	1.0	1.0	10		1.0	N	0.0	10000
001 -T	J178L4		1.0	1.0	1.0	10		1.0	N	0.0	10000
002	J178L5		1.0	1.0		10		1.0	N	0.0	10000
003	J178L6		1.0	1.0		10		1.0	N	0.0	10000
004	J178L7		1.0	1.0		10		1.0	N	0.0	10000
005	J178L8		1.0	1.0		10		1.0	N	0.0	10000
0809L091-	WC-HANFORD RC-088										
001	J17H45		1.0	1.0		10		1.0	N	0.0	10000
001 -S	J17H45		1.0	1.0	1.0	10		1.0	N	0.0	10000
001 -T	J17H45		1.0	1.0	1.0	10		1.0	N	0.0	10000
002	J17H46		1.0	1.0		10		1.0	N	0.0	10000
003	J17H47		1.0	1.0		10		1.0	N	0.0	10000
004	J17H48		1.0	1.0		10		1.0	N	0.0	10000
005	J17H49		1.0	1.0		10		1.0	N	0.0	10000
006	J17HM8		1.0	1.0		10		1.0	N	0.0	10000

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	9/16/08 0905	SZ	9/16/08 9:05	GC

000000006

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 2 WD3580

Extract. Date: 09/15/08 Extraction Batch No: 08LE0438 Analyst: MF Method: ****

Test: OPCB Cleanup Date: 09/15/08 Analyst: MF Client: WC-HANFORD RC-088 K1326

LIMS Report Date: 09/16/08 Solvent: HEXANE Adsorbent: H2SO4

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
08LE0438-MB1	PBLKUP		1.0	1.0		10		1.0	N	100.00	10000
08LE0438-MB1 -S	PBLKUP		1.0	1.0	1.0	10		1.0	N	100.00	10000

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	9/16/08 0905	SL	9/16/08 9:05	GC

0000000007

nville Laboratory Use Only

18091091

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

nt W.C. Hanford SAFH RC-088

Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager D. Johnson

SW846 Del STD TAT 7 Day

te Rec'd 9-11-08 Date Due 9-18-08

		A	B
Refrigerator #			
#/Type Container	Liquid	1G	1G
	Solid		
Volume		40	250
Preservatives		—	

ANALYSES REQUESTED →

ORGANIC				INORG			
VOA	BNA	~~Pest/~~ PCB	Herb	TCP Metal	Hg	CN	Summary

Lionville Laboratory Use Only

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254	OPCB					Met①		ITOH				
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	001	J17H45			OIL	9-5-08	1350	X	X	X					X		X				
	002	46					1405	X	X	X					X		X				
	003	47					1415	X	X	X					X		X				
	004	48					1440	X	X	X					X		X				
	005	49					1450	X	X	X					X		X				
	006	J17HM8					1500	X	X	X					X		X				

ecial Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[signature]	9/11/08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-076	Page 1 of 1

ollector S. Deeter	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code	Data Turnaround ~~15~~ 7 Days JRD 9/5/08
roject Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088		
ce Chest No. AFS-04-053	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment FedEx		
hipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080348		Bill of Lading/Air Bill No. see ospc		

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				RCF#	Drum #
Sample No. / Matrix * / Sample Date / Sample Time											
J17H45 / OTHER / 9/5/08 / 1350	X	X	X	X	X					J17H75	7139
J17H46 / OTHER / 9/5/08 / 1405	X	X	X	X	X					J17H76	7138
J17H47 / OTHER / 9/5/08 / 1415	X	X	X	X	X					J17H77	7146
J17H48 / OTHER / 9/5/08 / 1440	X	X	X	X	X					J17H78	7043
J17H49 / OTHER / 9/5/08 / 1450	X	X	X	X	X					J17H79	7040

JRD 9/5/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SDEETER	1650 9-5-08	JRDeBruijne	1630 9-5-08
JRDeBruijne	1700 9/5/08	1060 JB	1700 9/5/08
1060/JB	1200 SEP 10 2008	MStankovich	1200 SEP 10 2008
MStankovich	1200 SEP 10 2008	FedEx	
EC	9-11-08 0930		9-11-08 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

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

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

WCH-EE-011

000000009

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-086	Page 1 of 1

Collector: S. Deeter	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code	Data Turnaround: 15 Days 7		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1395-13	COA: RG61878500	Method of Shipment: Fed Ex JRD 9/5/08
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080348		Bill of Lading/Air Bill No.: see aspx

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. 9/5/08				RCF#	Drum#
Sample No. / Matrix * / Sample Date / Sample Time											
J17HM8 / OTHER / 9/5/08 / 1500	X	X	X	X	X	JRD				J17HN8	7046
J17HM9 / OTHER											
J17HN0 / OTHER											
J17HN1 / OTHER											
J17HN2 / OTHER											

JRD 9/5/08

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S DEETER	1630 9-5-08	JRDeBrigue JRD	1630 9/5/08
JRDeBrigue JRD	1700 9/5/08	1060 IB	1700 9/5/08
1060/IB	1200 SEP 10 2008	MSLankovich	1200 SEP 10 2008
MSLankovich	1200 SEP 10 2008	Fed Ex	
Fed Ex	9-11-08 0930		9-11-08 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

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
Ve=Vegetation
X=Other

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

NCH-EE-011

000000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford
Project/SAF/SOW/Release #: RC-088

Date: 9/11/08

LvLI Batch #: 08096091

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 0883 3003
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-8°	°C	Cooler # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17H45						
SILVER, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
SILVER, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
SILVER, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
ALUMINUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/16/08
ALUMINUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/16/08
ALUMINUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/16/08
ARSENIC, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
ARSENIC, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
ARSENIC, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
CALCIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
CALCIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
CALCIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
MERCURY, TOTAL	001	OI	08C0160	09/05/08	09/15/08	09/16/08
POTASSIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/16/08
POTASSIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
MAGNESIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
MAGNESIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
SODIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/16/08
SODIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/16/08
SODIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/16/08
NICKEL, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
NICKEL, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
NICKEL, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	001	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	001 REP	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	001 MS	OI	08L0336	09/05/08	09/15/08	09/17/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17H46						
SILVER, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
ALUMINUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/16/08
ARSENIC, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
CALCIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
MERCURY, TOTAL	002	OI	08C0160	09/05/08	09/15/08	09/16/08
MERCURY, TOTAL	002 REP	OI	08C0160	09/05/08	09/15/08	09/16/08
MERCURY, TOTAL	002 MS	OI	08C0160	09/05/08	09/15/08	09/16/08
POTASSIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
SODIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/16/08
NICKEL, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	002	OI	08L0336	09/05/08	09/15/08	09/17/08
J17H47						
SILVER, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
ALUMINUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/16/08
ARSENIC, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CALCIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
MERCURY, TOTAL	003	OI	08C0160	09/05/08	09/15/08	09/16/08
POTASSIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
SODIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/16/08
NICKEL, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	003	OI	08L0336	09/05/08	09/15/08	09/17/08
J17H48						
SILVER, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
ALUMINUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/16/08
ARSENIC, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
CALCIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
MERCURY, TOTAL	004	OI	08C0160	09/05/08	09/15/08	09/16/08
POTASSIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/16/08
NICKEL, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	004	OI	08L0336	09/05/08	09/15/08	09/17/08
J17H49						
SILVER, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
ALUMINUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/16/08
ARSENIC, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
CALCIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
MERCURY, TOTAL	005	OI	08C0160	09/05/08	09/15/08	09/16/08
POTASSIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
SODIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/16/08
NICKEL, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	005	OI	08L0336	09/05/08	09/15/08	09/17/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17HM8						
SILVER, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
ALUMINUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/16/08
ARSENIC, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
BARIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
BERYLLIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
CALCIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
CADMIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
COBALT, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
CHROMIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
COPPER, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
IRON, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
MERCURY, TOTAL	006	OI	08C0160	09/05/08	09/15/08	09/16/08
POTASSIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/16/08
MAGNESIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
MANGANESE, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
SODIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/16/08
NICKEL, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
LEAD, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
ANTIMONY, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
SELENIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
TIN, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
THALLIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
VANADIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
ZINC, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08
ZIRCONIUM, TOTAL	006	OI	08L0336	09/05/08	09/15/08	09/17/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
SILVER, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ALUMINUM LABORTORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ALUMINUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ARSENIC LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ARSENIC, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
BARIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
BERYLLIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
CALCIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
CALCIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
CADMIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
CADMIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
COBALT LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
COBALT, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
CHROMIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
CHROMIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
COPPER LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
COPPER, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
IRON LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
IRON, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
MERCURY LABORATORY	LC1 BS	S	08C0160	N/A	09/15/08	09/16/08
MERCURY, TOTAL	MB1	S	08C0160	N/A	09/15/08	09/16/08
POTASSIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
POTASSIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
MAGNESIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
MANGANESE LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
MANGANESE, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
SODIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
SODIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
NICKEL LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
NICKEL, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
LEAD LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
LEAD, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ANTIMONY LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ANTIMONY, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
SELENIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
SELENIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
TIN LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
TIN, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
THALLIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
THALLIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
VANADIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08

LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ZINC LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ZINC, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0336	N/A	09/15/08	09/16/08
ZIRCONIUM, TOTAL	MB1	S	08L0336	N/A	09/15/08	09/16/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088
LVL#: 0809L091
SDG/SAF#: K1327/RC-088

W.O.#: 60049-001-001-0001-00
Date Received: 09-11-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below.

1. This narrative covers the analyses of 6 oil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The sample results were reported on a wet weight "as received" basis.

   All samples were run with 5-fold dilutions for Mercury due to sample matrix.

   All samples were run on a different instrument for Aluminum.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of Sodium and Potassium in files TA0916A and TA0917A. All samples were rerun and reported for Potassium and Sodium in file PS0916C along with Aluminum.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ). Exposure 3 for CCB2 in file TA0917A was eliminated as an outlier due to insufficient sample in the cup.

6. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), the samples read greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB 08L0335 result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} The samples J17H45 and J17H48 read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 31 pages.

a.) The remainder of the samples in this preparation batch were found to contain Sodium at concentrations greater than 20X the preparation blank.

7. All ICP Interference Check Standards were within control limits.

8. All laboratory control samples (LCS) were within the 80-120% control. Refer to the Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. The duplicate analyses for 6 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

11. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

12. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/18/08
Date

alm/m09-091

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

ıe following methods are used as reference for the digestion and analysis of samples contained within this

ɔt#: 08091091

eaching Procedure: __1310 __1311 __1312 __Other:_____

LP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Ietals Digestion Methods: __3005A __3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
ıluminum	✓6010B		200.7				99
ıntimony	✓6010B	7041 [5]	200.7	204.2			99
ırsenic	✓6010B	7060A [5]	200.7	206.2	3113B		99
3arium	✓6010B		200.7				99
3eryllium	✓6010B		200.7				99
3ismuth	6010B [1]		200.7 [1]			1620	99
3oron	6010B		200.7				99
Cadmium	✓6010B	7131A [5]	200.7	213.2			99
Calcium	✓6010B		200.7				99
Chromium	✓6010B	7191 [5]	200.7	218.2			SS17
Cobalt	✓6010B		200.7				99
Copper	✓6010B	7211 [5]	200.7	220.2			99
Iron	✓6010B		200.7				99
Lead	✓6010B	7421 [5]	200.7	239.2	3113B		99
Lithium	6010B	7430 [4]	200.7			1620	99
Magnesium	✓6010B		200.7				99
Manganese	✓6010B		200.7				99
Mercury	7470A [3]	✓7471A [3]	245.1 [2]	245.5 [2]			99
Molybdenum	6010B		200.7				99
Nickel	✓6010B		200.7				99
Potassium	✓6010B	7610 [4]	200.7	258.1 [4]			99
Rare Earths	6010B [1]		200.7 [1]			1620	99
Selenium	✓6010B	7740 [5]	200.7	270.2	3113B		99
Silicon	6010B [1]		200.7			1620	99
Silica	6010B		200.7			1620	99
Silver	✓6010B	7761 [5]	200.7	272.2			99
Sodium	✓6010B	7770 [4]	200.7	273.1 [4]			99
Strontium	6010B		200.7				99
Thallium	✓6010B	7841 [5]	200.7	279.2	200.9		99
Tin	✓6010B		200.7				99
Titanium	6010B		200.7				99
Uranium	6010B [1]		200.7 [1]			1620	99
Vanadium	✓6010B		200.7				99
Zinc	✓6010B		200.7				99
Zirconium	✓6010B [1]		200.7 [1]			1620	99

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17H45	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	9.1	MG/KG	3.8	1.0
		Arsenic, Total	0.56	MG/KG	0.47	1.0
		Barium, Total	4.4	MG/KG	0.09	1.0
		Beryllium, Total	0.82	MG/KG	0.05	1.0
		Calcium, Total	49.3	MG/KG	3.8	1.0
		Cadmium, Total	0.27	MG/KG	0.05	1.0
		Cobalt, Total	0.19 u	MG/KG	0.19	1.0
		Chromium, Total	1.5	MG/KG	0.19	1.0
		Copper, Total	15.6	MG/KG	0.19	1.0
		Iron, Total	141	MG/KG	4.2	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	46.5 u	MG/KG	46.5	1.0
		Magnesium, Total	6.9	MG/KG	2.4	1.0
		Manganese, Total	3.9	MG/KG	0.04	1.0
		Sodium, Total	107	MG/KG	1.9	1.0
		Nickel, Total	0.20	MG/KG	0.19	1.0
		Lead, Total	94.4	MG/KG	0.28	1.0
		Antimony, Total	0.32	MG/KG	0.28	1.0
		Selenium, Total	0.69	MG/KG	0.57	1.0
		Tin, Total	1.5	MG/KG	0.57	1.0
		Thallium, Total	0.57 u	MG/KG	0.57	1.0
		Vanadium, Total	0.15	MG/KG	0.13	1.0
		Zinc, Total	44.6	MG/KG	0.57	1.0
		Zirconium, Total	4.7 u	MG/KG	4.7	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J17H46	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	3.6 u	MG/KG	3.6	1.0
		Arsenic, Total	0.68	MG/KG	0.45	1.0
		Barium, Total	0.27	MG/KG	0.09	1.0
		Beryllium, Total	23.9	MG/KG	0.05	1.0
		Calcium, Total	22.8	MG/KG	3.6	1.0
		Cadmium, Total	0.11	MG/KG	0.05	1.0
		Cobalt, Total	0.18 u	MG/KG	0.18	1.0
		Chromium, Total	0.27	MG/KG	0.18	1.0
		Copper, Total	0.57	MG/KG	0.18	1.0
		Iron, Total	57.0	MG/KG	4.1	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	44.4 u	MG/KG	44.4	1.0
		Magnesium, Total	2.9	MG/KG	2.3	1.0
		Manganese, Total	0.45	MG/KG	0.04	1.0
		Sodium, Total	1610	MG/KG	1.8	1.0
		Nickel, Total	0.18 u	MG/KG	0.18	1.0
		Lead, Total	0.27 u	MG/KG	0.27	1.0
		Antimony, Total	0.27 u	MG/KG	0.27	1.0
		Selenium, Total	0.54 u	MG/KG	0.54	1.0
		Tin, Total	0.81	MG/KG	0.54	1.0
		Thallium, Total	0.54 u	MG/KG	0.54	1.0
		Vanadium, Total	0.13 u	MG/KG	0.13	1.0
		Zinc, Total	5.1	MG/KG	0.54	1.0
		Zirconium, Total	42.0	MG/KG	4.5	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327

LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J17H47	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	3.9 u	MG/KG	3.9	1.0
		Arsenic, Total	0.49 u	MG/KG	0.49	1.0
		Barium, Total	0.42	MG/KG	0.1	1.0
		Beryllium, Total	3.6	MG/KG	0.05	1.0
		Calcium, Total	64.6	MG/KG	3.9	1.0
		Cadmium, Total	0.48	MG/KG	0.05	1.0
		Cobalt, Total	0.48	MG/KG	0.20	1.0
		Chromium, Total	0.39	MG/KG	0.20	1.0
		Copper, Total	1.5	MG/KG	0.20	1.0
		Iron, Total	156	MG/KG	4.4	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	48.3 u	MG/KG	48.3	1.0
		Magnesium, Total	7.5	MG/KG	2.4	1.0
		Manganese, Total	0.86	MG/KG	0.04	1.0
		Sodium, Total	385	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.64	MG/KG	0.29	1.0
		Antimony, Total	0.35	MG/KG	0.29	1.0
		Selenium, Total	0.88	MG/KG	0.59	1.0
		Tin, Total	1.4	MG/KG	0.59	1.0
		Thallium, Total	0.59 u	MG/KG	0.59	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	36.0	MG/KG	0.59	1.0
		Zirconium, Total	4.9 u	MG/KG	4.9	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327

LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17H48	Silver, Total	0.1	u	MG/KG	0.1	1.0
		Aluminum, Total	3.9	u	MG/KG	3.9	1.0
		Arsenic, Total	0.50		MG/KG	0.49	1.0
		Barium, Total	0.80		MG/KG	0.1	1.0
		Beryllium, Total	0.62		MG/KG	0.05	1.0
		Calcium, Total	36.1		MG/KG	3.9	1.0
		Cadmium, Total	0.05		MG/KG	0.05	1.0
		Cobalt, Total	0.19	u	MG/KG	0.19	1.0
		Chromium, Total	0.28		MG/KG	0.19	1.0
		Copper, Total	0.28		MG/KG	0.19	1.0
		Iron, Total	249		MG/KG	4.4	1.0
		Mercury, Total	0.05	u	MG/KG	0.05	5.0
		Potassium, Total	47.8	u	MG/KG	47.8	1.0
		Magnesium, Total	16.7		MG/KG	2.4	1.0
		Manganese, Total	2.2		MG/KG	0.04	1.0
		Sodium, Total	71.3		MG/KG	1.9	1.0
		Nickel, Total	0.19	u	MG/KG	0.19	1.0
		Lead, Total	0.29	u	MG/KG	0.29	1.0
		Antimony, Total	0.32		MG/KG	0.29	1.0
		Selenium, Total	0.97		MG/KG	0.58	1.0
		Tin, Total	1.4		MG/KG	0.58	1.0
		Thallium, Total	0.58	u	MG/KG	0.58	1.0
		Vanadium, Total	0.14	u	MG/KG	0.14	1.0
		Zinc, Total	1.6		MG/KG	0.58	1.0
		Zirconium, Total	4.9	u	MG/KG	4.9	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J17H49	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	8.7	MG/KG	3.7	1.0
		Arsenic, Total	0.46 u	MG/KG	0.46	1.0
		Barium, Total	0.59	MG/KG	0.09	1.0
		Beryllium, Total	0.20	MG/KG	0.05	1.0
		Calcium, Total	59.4	MG/KG	3.7	1.0
		Cadmium, Total	0.06	MG/KG	0.05	1.0
		Cobalt, Total	0.18 u	MG/KG	0.18	1.0
		Chromium, Total	0.51	MG/KG	0.18	1.0
		Copper, Total	53.5	MG/KG	0.18	1.0
		Iron, Total	97.5	MG/KG	4.1	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	45.2 u	MG/KG	45.2	1.0
		Magnesium, Total	13.8	MG/KG	2.3	1.0
		Manganese, Total	1.5	MG/KG	0.04	1.0
		Sodium, Total	2330	MG/KG	1.8	1.0
		Nickel, Total	0.64	MG/KG	0.18	1.0
		Lead, Total	1.6	MG/KG	0.28	1.0
		Antimony, Total	0.31	MG/KG	0.28	1.0
		Selenium, Total	0.55 u	MG/KG	0.55	1.0
		Tin, Total	2.0	MG/KG	0.55	1.0
		Thallium, Total	0.55 u	MG/KG	0.55	1.0
		Vanadium, Total	0.21	MG/KG	0.13	1.0
		Zinc, Total	12.3	MG/KG	0.55	1.0
		Zirconium, Total	44.7	MG/KG	4.6	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J17HM8	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	13.8	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.67	MG/KG	0.1	1.0
		Beryllium, Total	8.0	MG/KG	0.05	1.0
		Calcium, Total	64.1	MG/KG	4.0	1.0
		Cadmium, Total	0.07	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.21	MG/KG	0.20	1.0
		Copper, Total	0.61	MG/KG	0.20	1.0
		Iron, Total	31.0	MG/KG	4.5	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	48.8 u	MG/KG	48.8	1.0
		Magnesium, Total	20.1	MG/KG	2.5	1.0
		Manganese, Total	0.50	MG/KG	0.04	1.0
		Sodium, Total	2910	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.59 u	MG/KG	0.59	1.0
		Tin, Total	0.71	MG/KG	0.59	1.0
		Thallium, Total	0.59 u	MG/KG	0.59	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	4.3	MG/KG	0.59	1.0
		Zirconium, Total	28.1	MG/KG	5.0	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/18/08

CLIENT: WC-HANFORD RC-088 K1327

LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0336-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4.0 u	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	11.1	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	4.5 u	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.05	MG/KG	0.04	1.0
		Sodium, Total	12.7	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Tin, Total	0.96	MG/KG	0.60	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	1.1	MG/KG	0.60	1.0
		Zirconium, Total	5.0 u	MG/KG	5.0	1.0
BLANK1	08C0160-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327

LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17H45	Silver, Total	4.2	0.09u	4.4	95.5	1.0
		Aluminum, Total	174	9.1	177	93.3	1.0
		Arsenic, Total	165	0.56	177	92.7	1.0
		Barium, Total	173	4.4	177	95.1	1.0
		Beryllium, Total	5.0	0.82	4.4	95.0	1.0
		Calcium, Total	2130	49.3	2210	94.2	1.0
		Cadmium, Total	4.4	0.27	4.4	93.9	1.0
		Cobalt, Total	41.5	0.19u	44.3	93.7	1.0
		Chromium, Total	18.5	1.5	17.7	96.0	1.0
		Copper, Total	37.0	15.6	22.1	96.8	1.0
		Iron, Total	226	141	88.5	96.0	1.0
		Potassium, Total	2070	46.5 u	2210	93.5	1.0
		Magnesium, Total	2010	6.9	2210	90.7	1.0
		Manganese, Total	46.2	3.9	44.3	95.5	1.0
		Sodium, Total	2200	107	2210	94.4	1.0
		Nickel, Total	41.5	0.20	44.3	93.2	1.0
		Lead, Total	134	94.4	44.3	88.7	1.0
		Antimony, Total	40.2	0.32	44.3	90.0	1.0
		Selenium, Total	140	0.69	177	78.6	1.0
		Tin, Total	82.9	1.5	88.5	92.0	1.0
		Thallium, Total	164	0.57u	177	92.7	1.0
		Vanadium, Total	41.6	0.15	44.3	93.6	1.0
		Zinc, Total	85.2	44.6	44.3	91.6	1.0
		Zirconium, Total	432	4.7 u	442	97.7	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J17H46	Mercury, Total	1.6	0.05u	1.5	104.8	5.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17H45	Silver, Total	0.09u	0.09u	NC	1.0
		Aluminum, Total	9.1	8.9	2.2	1.0
		Arsenic, Total	0.56	0.85	40.7	1.0
		Barium, Total	4.4	4.4	0.00	1.0
		Beryllium, Total	0.82	0.80	2.4	1.0
		Calcium, Total	49.3	74.4	40.6	1.0
		Cadmium, Total	0.27	0.26	1.6	1.0
		Cobalt, Total	0.19u	0.19u	NC	1.0
		Chromium, Total	1.5	1.5	0.00	1.0
		Copper, Total	15.6	15.2	2.6	1.0
		Iron, Total	141	138	2.6	1.0
		Potassium, Total	46.5 u	46.1 u	NC	1.0
		Magnesium, Total	6.9	10.8	44.1	1.0
		Manganese, Total	3.9	3.8	2.6	1.0
		Sodium, Total	107	123	13.8	1.0
		Nickel, Total	0.20	0.20	2.2	1.0
		Lead, Total	94.4	93.2	1.3	1.0
		Antimony, Total	0.32	0.28u	~~NC~~ 200 *	1.0
		Selenium, Total	0.69	0.57	20.0	1.0
		Tin, Total	1.5	1.6	6.5	1.0
		Thallium, Total	0.57u	0.56u	NC	1.0
		Vanadium, Total	0.15	0.13u	~~NC~~ 200 *	1.0
		Zinc, Total	44.6	44.0	1.4	1.0
		Zirconium, Total	4.7 u	4.7 u	NC	1.0

* Corrected RPD
aem 9/18/08

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J17H46	Mercury, Total	0.05u	0.05u	NC	5.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/18/08

CLIENT: WC-HANFORD RC-088 K1327 LVL LOT #: 0809L091

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0336-LC1	Silver, LCS	48.6	50.0	MG/KG	97.2
		Aluminum, LCS	482	500	MG/KG	96.4
		Arsenic, LCS	941	1000	MG/KG	94.1
		Barium, LCS	484	500	MG/KG	96.8
		Beryllium, LCS	24.4	25.0	MG/KG	97.6
		Calcium, LCS	2450	2500	MG/KG	97.8
		Cadmium, LCS	23.8	25.0	MG/KG	95.2
		Cobalt, LCS	240	250	MG/KG	96.2
		Chromium, LCS	49.2	50.0	MG/KG	98.4
		Copper, LCS	122	125	MG/KG	97.9
		Iron, LCS	481	500	MG/KG	96.2
		Potassium, LCS	2330	2500	MG/KG	93.3
		Magnesium, LCS	2370	2500	MG/KG	94.6
		Manganese, LCS	73.3	75.0	MG/KG	97.7
		Sodium, LCS	2400	2500	MG/KG	95.9
		Nickel, LCS	194	200	MG/KG	97.0
		Lead, LCS	240	250	MG/KG	96.2
		Antimony, LCS	281	300	MG/KG	93.8
		Selenium, LCS	913	1000	MG/KG	91.3
		Tin, LCS	478	500	MG/KG	95.6
		Thallium, LCS	960	1000	MG/KG	96.0
		Vanadium, LCS	240	250	MG/KG	96.0
		Zinc, LCS	97.3	100	MG/KG	97.3
		Zirconium, LCS	475	500	MG/KG	95.1
LCS1	08C0160-LC1	Mercury, LCS	4.7	4.7	MG/KG	100.9

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0336
Date/Time Initiated: 9/15/08 1700
Date/Time Completed: 9/15/08 2145
Analyst(s): MW
Matrix: (Soil) Water Other: liquid
Instr. Type: AA ICP
Parameters: see backlog

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 91°

TMW

Method: SW (circle)

	3005A	DW	200.7 (1994)
	3010A		200.9
	3015		3113B
	3020A		
	7060A (As/Se)	MCAWW	200.7 (1982)
	7760A (Ag)		200 (AA)
			206.2 (As/Se)
	(3050B)		
	3051	SM	3030C (NC)
CLP	ILMO3.0	Other	tiffin
	ILMO4.0		

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0809L091-001		1.06gm	100ml	<2	TO	liquid	from oil		RAD
001R		1.07gm							
001S	1.0ml *	1.13gm							
002		1.11gm							
003		1.02gm							RAD
004		1.03gm							
005		1.09gm					from milky liquid		RAD
006		1.01gm							
0809L086-001		1.14gm				fine	from soil	rocks	RAD
001R		1.10gm							
001S	1.0ml	1.17gm							
0809L086-001		1.21gm							
001R		1.23gm							
001S	1.0ml	1.25gm							
08L0336-MB1		1.0gm				coarse	floating chips		
LCS	1.0ml *	1.0gm							

MW 9/15/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

* also 0.5ml 6072-079-13 (2r)

Reagent IDs:
HNO_3 G07057
HCL G26054
H_2O_2 G15A18
1:1 HNO_3 9789-053-08
1:1 HCL

File ID#: IC033601, IC036 IC033603.
LIMS Transfer: (Y) N updated
Data Review By/Date: 9/17/08

Lionville Laboratory
Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: TLD
Date: 9/15/08
Start Time/Temp: 1815 / 94°
End Time/Temp: 1845 / 98°

Instrument ID: HG3.1
Balance #: B29 ✓ /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0160
Worksheet: HG0911001
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes N/A No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	H3			10mL	50mL	
0.2 µg/L	8	0.100				
1.0	3VG	0.500				
2.0	5H	1.000				
5.0	3C	2.500				
10.0	41	5.000				
ICV	RU	0.125	2.5			
CCV	194	0.250	5.0			
ICB/CCB	C4D					90.80
MB1	KX			0.30		PBS160 100.0
LCI	CM	*	*	0.32		
0809L053-001	205			0.35		R 99.03
001R	AP			0.41		
001S	P3	0.500	1.0	0.35		
002	DX			0.31		99.25
003	114			0.37		
0809L074-001	5T			0.31		100.0
001R	Q12			0.31		
001S	154	0.050	10.0	0.31		
002	N2			0.33		
003	31			0.32		
004	F8			0.36		
005	514			0.39		
0809L086-001	537			0.32		R 98.61
001R	NR			0.36		
001S	81G	0.500	1.0	0.32		
0809L091-001	TR			0.30		102.0

Standard:	ID	Prep Date/Time
A CAL/MS	R1 6072-78-14B	9/15/08 1235
CV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date: [signature] 9/16

see book # 836Y for std traceability information

*LCS = US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: EEA
Date 9/15/08
Start Time/Temp:
End Time/Temp: see page 020

Instrument ID HG3.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0160
Worksheet: HG091601
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0809L091-002	E			0.32	50mL	100..
002R	676			0.33		
002S	112	0.050	10.0	0.33		
003	HH			0.30		R
004	P7			0.31		
005	L53			0.30		R
006	L2			0.30		

EEA 9/15/08

Standard:	ID	Prep Date/Time
A CAL/MS		
CV/CCV/LCS	see page 020	

Reviewed By/Date: [signature] 9/16

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

ME-HgCVAA-Prep1007

Page #:

000000027

nville Laboratory Use Only

08091091

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent W.C. Hanford SAFH RC-088

Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager C. Johnson

SW846 Del STD TAT 7 Day

te Rec'd 9-11-08 Date Due 9-18-08

		A	B
Refrigerator #			
#/Type Container	Liquid	1G	1G
	Solid		
Volume		40	250
Preservatives		—	

ANALYSES REQUESTED →

Matrix	Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	PCB	Herb				Metal	CN	Ignitability				
								ORGANIC							INORG						
								Lionville Laboratory Use Only													
								8260H	8270H	8082					Met①		Ign				
Soil	001	J17H45			OIL	9-5-08	1350	X	X	X					X		X				
Sediment	002	46					1405	X	X	X					X		X				
Solid	003	47					1415	X	X	X					X		X				
Sludge	004	48					1440	X	X	X					X		X				
Water	005	49					1450	X	X	X					X		X				
Oil	006	J17HM8					1500	X	X	X					X		X				
Air																					
Drum Solids																					
Drum Liquids																					
EP/TCLP Leachate																					
Wipe																					
Other																					
Fish																					

TRIX DES:

Special Instructions: Run matrix Qe

Met① = HSL + Sn, Zr

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
		9/11/08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000028

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-076	Page 1 of 1

Collector: S. Deeter	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code	Data Turnaround: 15 Days 7 JPD 9/5/08		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)	SAF No.: RC-088	
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1395-13	COA: RG61878500	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080348	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time								RCF#	Drum #
17H45	OTHER	9/5/08	1350	X	X	X	X	X			J17H75	7139
17H46	OTHER	9/5/08	1405	X	X	X	X	X			J17H76	7138
17H47	OTHER	9/5/08	1415	X	X	X	X	X			J17H77	7146
17H48	OTHER	9/5/08	1440	X	X	X	X	X			J17H78	7043
17H49	OTHER	9/5/08	1450	X	X	X	X	X			J17H79	7040

JPD 9/5/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SDEETER	1650 9-5-08	JRDeBruine	1630 9-5-08
JRDeBruine	1700 9/5/08	1060 IB	1700 9/5/08
1060/IB	1200 SEP 10 2008	MSHankovich	1200 SEP 10 2008
MSHankovich	1200 SEP 10 2008	FedEx	
FedEx	9-11-08 0930		9-11-08 0930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JPD

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
Ve=Vegetation
X=Other

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

VCH-EE-011

0000000029

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-086 | Page 1 of 1

Collector: S. Deeter	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code	Data Turnaround: ~~15~~ 7 Days JRD 9/5/08		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1395-13	COA: RG61878500	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080348		Bill of Lading/Air Bill No.: see asx

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. 9/5/08					

Sample No.	Matrix *	Sample Date	Sample Time									RCF #	Drum #
117HM8	OTHER	9/5/08	1500	X	X	X	X	X				J17HM8	7046
117HM9	OTHER												
117HN0 9/5/08	OTHER												
117HN1 JRD	OTHER												
117HN2	OTHER												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S DEETER	1630 9-5-08	JR DeBrigue JRD	1630 9/5/08
JRD DeBrigue JRD	1700 9/5/08	1060 IB	1700 9/5/08
1060/IB	1200 SEP 10 2008	MLSlankovich	SEP 10 2008 1200
WCH MLSlankovich	1200 SEP 10 2008		Fed Ex
Fed Ex	9-11-08 0930		9-11-08 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

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

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

VCH-EE-011

0000000030

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-088

Date: 9/11/06

LvLI Batch #: 0809L091

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 0883 3003
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-8°	°C	Cooler # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1327

DATE RECEIVED: 09/11/08 LVL LOT # :0809L091

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17H45						
IGNITABILITY	001	OI	08LFP031	09/05/08	09/15/08	09/15/08
J17H46						
IGNITABILITY	002	OI	08LFP031	09/05/08	09/15/08	09/15/08
J17H47						
IGNITABILITY	003	OI	08LFP031	09/05/08	09/15/08	09/15/08
J17H48						
IGNITABILITY	004	OI	08LFP031	09/05/08	09/15/08	09/15/08
J17H49						
IGNITABILITY	005	OI	08LFP031	09/05/08	09/15/08	09/15/08
J17HM8						
IGNITABILITY	006	OI	08LFP031	09/05/08	09/15/08	09/15/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088 K1327
LVL#: 0809L091

W.O.#: 60049-001-001-0001-00
Date Received: 09-11-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 6 liquid samples.

2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.

3. Sample holding time as required by the method and/or contract was met.

4. The results presented in this report are derived from samples that met the LVL sample acceptance policy.

5. The Laboratory Control Sample (LCS) was within the method criteria.

6. Insufficient sample volume was available so as to perform replicate analysis.

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

for Iain Daniels
Laboratory Manager
Lionville Laboratory

10/7/08
Date

njp\i09-091

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	__ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		__ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		✓ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: **Method:**

Other: **Method**

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Inorganic Data Summary Report
Physical Testing Observation

Client: WC-HANFORD RC-088 K1327
LVL#: 0809L091

W.O.#: 60049-001-001-0001-00
Date Received: 09-11-08

Analyte:	**Observation:**
Ignitability	Samples J17H45, J17H46, J17H47, J17H48, J17H49 and J17HM8 did not ignite. The samples were heated to approximately 210°F. p-Xylene was used to determined the accuracy of the ignitability apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 81°F.

njp\i08-091.pt2

onville Laboratory Use Only

08096091

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000006

ent W.C. Hanford SAFH RC-088

Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager O. Johnson

SW846 Del STD TAT 7 Day

te Rec'd 9-11-08 Date Due 9-18-08

		A	B
Refrigerator #			
#/Type Container	Liquid	1G	1G
	Solid		
Volume		40	250
Preservatives		—	

ANALYSES REQUESTED →

ORGANIC				INORG			
VOA	BNA	~~Pest/~~ PCB	Herb	TCP Metal	~~Hg~~	CN	~~Ignitability~~

Lionville Laboratory Use Only

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254	OPCB				MetO		ITGN				
	001	J17H45			oil	9-5-08	1350	X	X	X				X		X				
	002	46					1405	X	X	X				X		X				
	003	47					1415	X	X	X				X		X				
	004	48					1440	X	X	X				X		X				
	005	49					1450	X	X	X				X		X				
	006	J17HM8					1500	X	X	X				X		X				

Special Instructions: Run matrix QC

MetO = HSL + Sn, Zr

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9/11/08	0930

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-076	Page 1 of 1

Collector S. Deeter	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Project Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
ce Chest No. AFS-04-053	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment FedEx
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080348		Bill of Lading/Air Bill No. see ospc

Price Code

Data Turnaround: ~~15~~ 7 Days JRD 9/5/08

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	0	0	0	1					
Volume	40mL	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. JRD 9/5/08				RCF#	Drum #
Sample No.	Matrix *	Sample Date	Sample Time								
J17H45	OTHER	9/5/08	1350	X	X	X	X	X	JRD			J17H75	7139
J17H46	OTHER	9/5/08	1405	X	X	X	X	X				J17H76	7138
J17H47	OTHER	9/5/08	1415	X	X	X	X	X				J17H77	7146
J17H48	OTHER	9/5/08	1440	X	X	X	X	X				J17H78	7043
J17H49	OTHER	9/5/08	1450	X	X	X	X	X				J17H79	7040

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1650	Received By/Stored In	Date/Time 1630
SDEETER	9-5-08	JRDeBruigne JRD	9-5-08
Relinquished By/Removed From	Date/Time 1700	Received By/Stored In	Date/Time 1700
JRDeBruigne JRD	9/5/08	1060 JB	9/5/08
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
1060/JB 1200	SEP 10 2008	MJ Stankovich	1200 SEP 10 2008
Relinquished By/Removed From	Date/Time 1200	Received By/Stored In	Date/Time
MJ Stankovich	SEP 10 2008	FedEx	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
EC	9-11-08 0930		9-11-08 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

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

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

VCH-EE-011

000000007

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-086 | Page 1 of 1

Collector: S. Deeter	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code	Data Turnaround: ~~15~~ 7 Days		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1395-13	COA: RG61878500	Method of Shipment: Fed Ex JRD 9/5/08
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080348		Bill of Lading/Air Bill No.: see aspc

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	None				
Type of Container	aG	aG	aG	aG	aG	P				
No. of Container(s)	1	1	0	0	0	1				
Volume	40mL	250mL	125mL	125mL	60mL	500mL				
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. 9/5/08			RCF #	Drum #

Sample No.	Matrix *	Sample Date	Sample Time										
117HM8	OTHER	9/5/08	1500	X	X	X	X	X				J17HN8	7046
117HM9	OTHER												
117HN0	OTHER												
117HN1	OTHER												
117HN2	OTHER												

JRD 9/5/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S DEETER	1630 9-5-08	JR DeBrigue JRD	1630 9/5/08
JRD DeBrigue JRD	1700 9/5/08	1060 IB	1700 9/5/08
1060/IB	1200 SEP 10 2008	MSHankovich	1200 SEP 10 2008
MSHankovich	1200 SEP 10 2008	Fed Ex	
Fed Ex	9-11-08 0930		9-11-08 0930

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JRD

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

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

VCH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford **Date:** 9/11/08

Project/SAF/SOW/Release #: RC-088

LvLI Batch #: 08096091 **Sample Custodian:** [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 0883 3003
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-8°	°C	Cooler # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORIES