0078939

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

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 10/20/08 Initials/Date
Kathy Wendt	H4-21	KW 10/20/08 Initials/Date

COMMENTS:

SDG K1306 **SAF-RC-088**

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground Main Trench
Floor Loc - A

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 8, 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 R8-08-205-7875, SDG K1306

Dear Ms. Kessner:

Enclosed is the data report for two solid (other solid) samples designated under SAF No. RC-088 received at Eberline Services on August 29, 2008. The samples were analyzed according to the accompanying chain-of-custody documents.

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 K1306 was composed of two solid (other solid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Ground-Other Solid.

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 8, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.3 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

09/08/08

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 K1306

SDG	7875
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1306

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

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Prepared by

Melissa Mannion
Reviewed by

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

SDG 7875
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1306

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 09/08/08

SDG 7875
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1306

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.

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

LAB SAMPLE SUMMARY

SDG 7875
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1306

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R808205-01	J17HH4	618-7BurlGrnd TrnchFlrA	SOLID		RC-088	RC-088-084	08/28/08 09:25
R808205-02	J17HH5	618-7BurlGrnd TrnchFlrA	SOLID		RC-088	RC-088-084	08/28/08 09:50
R808205-03	Lab Control Sample		SOLID		RC-088		
R808205-04	Method Blank		SOLID		RC-088		
R808205-05	Duplicate (R808205-02)	618-7BurlGrnd TrnchFlrA	SOLID		RC-088		08/28/08 09:50

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

SDG 7875
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1306

: 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
:75	RC-088-084	J17HH4	SOLID	100.0	57 g		08/29/08	1	R808205-01	7875-001
		J17HH5	SOLID	100.0	45 g		08/29/08	1	R808205-02	7875-002
		Method Blank	SOLID						R808205-04	7875-004
		Lab Control Sample	SOLID						R808205-03	7875-003
		Duplicate (R808205-02)	SOLID	100.0	45 g		08/29/08	1	R808205-05	7875-005

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

SDG 7875
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1306

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
U	SOLID	Uranium, Isotopic in Solids	6160-104	8.0	2			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6160-104	20.6	2			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6160-104	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6160-104	7.0	2			1	1	1/1		

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

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

SDG 7875
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1306

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
308205-01	J17HH4			7875-001	93A/93		09/08/08	09/08/08	BW	Gross Alpha in Solids
08/28/08	618-7BurlGrnd TrnchFlrA		SOLID	7875-001	93B/93		09/08/08	09/08/08	BW	Gross Beta in Solids
08/29/08	RC-088-084	RC-088		7875-001	GAM		09/04/08	09/08/08	MWT	Gamma Scan
				7875-001	U		09/05/08	09/08/08	BW	Uranium, Isotopic in Solids
308205-02	J17HH5			7875-002	93A/93		09/08/08	09/08/08	BW	Gross Alpha in Solids
08/28/08	618-7BurlGrnd TrnchFlrA		SOLID	7875-002	93B/93		09/08/08	09/08/08	BW	Gross Beta in Solids
08/29/08	RC-088-084	RC-088		7875-002	GAM		09/04/08	09/08/08	MWT	Gamma Scan
				7875-002	U		09/05/08	09/08/08	BW	Uranium, Isotopic in Solids
308205-03	Lab Control Sample			7875-003	93A/93		09/08/08	09/08/08	BW	Gross Alpha in Solids
			SOLID	7875-003	93B/93		09/08/08	09/08/08	BW	Gross Beta in Solids
		RC-088		7875-003	GAM		09/04/08	09/08/08	MWT	Gamma Scan
				7875-003	U		09/05/08	09/08/08	BW	Uranium, Isotopic in Solids
308205-04	Method Blank			7875-004	93A/93		09/08/08	09/08/08	BW	Gross Alpha in Solids
			SOLID	7875-004	93B/93		09/08/08	09/08/08	BW	Gross Beta in Solids
		RC-088		7875-004	GAM		09/05/08	09/08/08	MWT	Gamma Scan
				7875-004	U		09/05/08	09/08/08	BW	Uranium, Isotopic in Solids
308205-05	Duplicate (R808205-02)			7875-005	93A/93		09/08/08	09/08/08	BW	Gross Alpha in Solids
08/28/08	618-7BurlGrnd TrnchFlrA		SOLID	7875-005	93B/93		09/08/08	09/08/08	BW	Gross Beta in Solids
08/29/08		RC-088		7875-005	GAM		09/05/08	09/08/08	MWT	Gamma Scan
				7875-005	U		09/05/08	09/08/08	BW	Uranium, Isotopic in Solids

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 Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
93B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
GAM	RC-088	Gamma Scan	GAMMA_GS	2			1	1	1	5
U	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	2			1	1	1	5
TOTALS				8			4	4	4	20

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

7875-004 Method Blank

METHOD BLANK

SDG	7875	Client/Case no	Hanford	SDG_K1306
Contact	Melissa C. Mannion	Contract	No. S00W235A00	
Lab sample id	R808205-04	Client sample id	Method Blank	
Dept sample id	7875-004	Material/Matrix		SOLID
		SAF No	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.935	3.2	7.53	10.0	U	93A
Gross Beta	12587-47-2	1.68	3.0	5.17	15.0	U	93B
Uranium 233/234	U-233/234	-0.005	0.015	0.033	1.00	U	U
Uranium 235	15117-96-1	0.003	0.006	0.022	1.00	U	U
Uranium 238	U-238	0	0.010	0.019	1.00	U	U
Potassium 40	13966-00-2	U		1.30		U	GAM
Cobalt 60	10198-40-0	U		0.064	0.050	U	GAM
Cesium 137	10045-97-3	U		0.057	0.100	U	GAM
Radium 226	13982-63-3	U		0.129	0.100	U	GAM
Radium 228	15262-20-1	U		0.270	0.200	U	GAM
Europium 152	14683-23-9	U		0.144	0.100	U	GAM
Europium 154	15585-10-1	U		0.160	0.100	U	GAM
Europium 155	14391-16-3	U		0.131	0.100	U	GAM
Thorium 228	14274-82-9	U		0.102		U	GAM
Thorium 232	TH-232	U		0.270		U	GAM
Uranium 235	15117-96-1	U		0.236		U	GAM
Uranium 238	U-238	U		6.94		U	GAM
Americium 241	14596-10-2	U		0.135		U	GAM

618-7 Burial Ground - Other Solid

QC-BLANK #67068

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

7875-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7875

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1306

Contract No. S00W235A00

Lab sample id R808205-03

Dept sample id 7875-003

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-088

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	103	16	5.85	10.0		93A	102	4.1	101	60-140	70-130
Gross Beta	93.5	7.9	6.94	15.0		93B	92.6	3.7	101	78-122	80-120
Uranium 233/234	16.5	0.56	0.250	1.00		U	18.6	0.74	89	87-113	80-120
Uranium 235	13.4	0.48	0.026	1.00		U	15.1	0.60	89	87-113	80-120
Uranium 238	17.0	0.58	0.236	1.00		U	20.2	0.81	84	87-113	80-120
Cobalt 60	5.10	0.17	0.134	0.050		GAM	4.75	0.19	107	86-114	80-120
Cesium 137	5.77	0.18	0.134	0.100		GAM	5.30	0.21	109	86-114	80-120

618-7 Burial Ground - Other Solid

QC-LCS #67067

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 09/08/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

7875-005 J17HH5

DUPLICATE

SDG	7875			Client/Case no	Hanford SDG K1306
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R808205-05	Lab sample id	R808205-02	Client sample id	J17HH5
Dept sample id	7875-005	Dept sample id	7875-002	Location/Matrix	618-7BurlGrnd TrnchFlrA SOLID
		Received	08/29/08	Collected/Weight	08/28/08 09:50 45 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-084 RC-088

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	43.0	13	14.9	10.0		93A	49.1	11	5.93		13	71	0.6
Gross Beta	46.8	5.7	5.67	15.0		93B	46.4	5.6	5.34		1	35	0.1
Uranium 233/234	20.8	0.64	0.085	1.00		U	20.8	0.66	0.080		0	18	0
Uranium 235	1.40	0.12	0.032	1.00		U	1.18	0.12	0.021		17	26	2.0
Uranium 238	20.2	0.63	0.080	1.00		U	20.2	0.64	0.075		0	18	0
Potassium 40	U		15.7		U	GAM	U		2.93	U	-		1.6
Cobalt 60	U		0.168	0.050	U	GAM	U		0.097	U	-		0.7
Cesium 137	U		0.176	0.100	U	GAM	U		0.240	U	-		0.4
Radium 226	U		0.617	0.100	U	GAM	U		0.507	U	-		0.3
Radium 228	U		1.26	0.200	U	GAM	U		1.22	U	-		0
Europium 152	U		0.464	0.100	U	GAM	U		0.284	U	-		0.7
Europium 154	U		0.506	0.100	U	GAM	U		0.310	U	-		0.7
Europium 155	U		0.407	0.100	U	GAM	U		0.244	U	-		0.7
Thorium 228	U		0.797		U	GAM	U		0.498	U	-		0.6
Thorium 232	U		1.26		U	GAM	U		1.22	U	-		0
Uranium 235	2.44	0.59	0.803			GAM	2.46	0.37	0.494		1	45	0.1
Uranium 238	98.9	26	24.1			GAM	96.2	15	13.6		3	48	0.2
Americium 241	U		0.227		U	GAM	U		0.140	U	-		0.7

618-7 Burial Ground - Other Solid

QC-DUP#2 67069

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

7875-001 J17HH4

DATA SHEET

SDG	7875	Client/Case no	Hanford	SDG K1306	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808205-01	Client sample id	J17HH4		
Dept sample id	7875-001	Location/Matrix	618-7BurlGrnd TrnchFlrA	SOLID	
Received	08/29/08	Collected/Weight	08/28/08 09:25	57 g	
% solids	100.0	Custody/SAF No	RC-088-084	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	156	20	6.25	10.0		93A
Gross Beta	12587-47-2	95.1	7.5	5.21	15.0		93B
Uranium 233/234	U-233/234	132	3.4	0.187	1.00		U
Uranium 235	15117-96-1	6.87	0.33	0.022	1.00		U
Uranium 238	U-238	47.8	1.4	0.178	1.00		U
Potassium 40	13966-00-2	8.48	0.64	0.363			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.037	0.100	U	GAM
Radium 226	13982-63-3	0.219	0.072	0.080	0.100		GAM
Radium 228	15262-20-1	0.444	0.17	0.150	0.200		GAM
Europium 152	14683-23-9	U		0.092	0.100	U	GAM
Europium 154	15585-10-1	U		0.083	0.100	U	GAM
Europium 155	14391-16-3	U		1.01	0.100	U	GAM
Thorium 228	14274-82-9	0.523	0.088	0.083			GAM
Thorium 232	TH-232	0.444	0.17	0.150			GAM
Uranium 235	15117-96-1	13.3	0.32	0.337			GAM
Uranium 238	U-238	136	5.8	3.91			GAM
Americium 241	14596-10-2	U		0.227		U	GAM

618-7 Burial Ground - Other Solid

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

7875-002 **J17HH5**

DATA SHEET

SDG	7875	Client/Case no	Hanford	SDG_K1306	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808205-02	Client sample id	J17HH5		
Dept sample id	7875-002	Location/Matrix	618-7BurlGrnd TrnchFlrA	SOLID	
Received	08/29/08	Collected/Weight	08/28/08 09:50	45 g	
% solids	100.0	Custody/SAF No	RC-088-084	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	49.1	11	5.93	10.0		93A
Gross Beta	12587-47-2	46.4	5.6	5.34	15.0		93B
Uranium 233/234	U-233/234	20.8	0.66	0.080	1.00		U
Uranium 235	15117-96-1	1.18	0.12	0.021	1.00		U
Uranium 238	U-238	20.2	0.64	0.075	1.00		U
Potassium 40	13966-00-2	U		2.93		U	GAM
Cobalt 60	10198-40-0	U		0.097	0.050	U	GAM
Cesium 137	10045-97-3	U		0.240	0.100	U	GAM
Radium 226	13982-63-3	U		0.507	0.100	U	GAM
Radium 228	15262-20-1	U		1.22	0.200	U	GAM
Europium 152	14683-23-9	U		0.284	0.100	U	GAM
Europium 154	15585-10-1	U		0.310	0.100	U	GAM
Europium 155	14391-16-3	U		0.244	0.100	U	GAM
Thorium 228	14274-82-9	U		0.498		U	GAM
Thorium 232	TH-232	U		1.22		U	GAM
Uranium 235	15117-96-1	2.46	0.37	0.494			GAM
Uranium 238	U-238	96.2	15	13.6			GAM
Americium 241	14596-10-2	U		0.140		U	GAM

618-7 Burial Ground - Other Solid

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

Test U Matrix SOLID
SDG 7875
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1306

ESULTS

LB MPLE 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 6160-104											
08205-01			7875-001	J17HH4	132	6.87	47.8	276	11	14	1
08205-02			7875-002	J17HH5	20.8	1.18	20.2	103	5	6	1
08205-03			7875-003	Lab Control Sample	ok	ok	LOW				
08205-04			7875-004	Method Blank	U	U	U				
08205-05			7875-005	Duplicate (R808205-02)	ok	ok	ok	103	5	7	1
minal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
.8-7 Burial Ground - Other Solid								Averages 161		9	

ETHOD PERFORMANCE

LB MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-104 2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 104																
08205-01			J17HH4	0.187	0.500			90		1022			8	09/05/08	09/05	SS-057
08205-02			J17HH5	0.080	0.500			96		1022			8	09/05/08	09/05	SS-058
08205-03			Lab Control Sample	0.250	0.500			101		1023				09/05/08	09/05	SS-064
08205-04			Method Blank	0.033	0.500			93		1023				09/05/08	09/05	SS-065
08205-05			Duplicate (R808205-02)	0.085	0.500			99		1023			8	09/05/08	09/05	SS-066
minal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.127 ± 0.178
YIELD 96 ± 9

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

Test 93A Matrix SOLID
SDG 7875
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1306

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
eparation batch 6160-104					
808205-01	93		7875-001	J17HH4	156
808205-02	93		7875-002	J17HH5	49.1
808205-03	93		7875-003	Lab Control Sample	ok
808205-04	93		7875-004	Method Blank	U
808205-05	93		7875-005	Duplicate (R808205-02)	ok

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

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6160-104			2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 104													
808205-01	93		J17HH4	6.25	0.100			68		100			11	09/05/08	09/08	GRB-101
808205-02	93		J17HH5	5.93	0.100			56		100			11	09/05/08	09/08	GRB-109
808205-03	93		Lab Control Sample	5.85	0.100			59		100				09/05/08	09/08	GRB-103
808205-04	93		Method Blank	7.53	0.100			60		100				09/05/08	09/08	GRB-104
808205-05	93		Duplicate (R808205-02)	14.9	0.100			56		100			11	09/05/08	09/08	GRB-110
ominal values and limits from method				10.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 8.09 ± 7.73
RESIDUE 60 ± 10

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

Test 93B Matrix SOLID
SDG 7875
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1306

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
reparation batch 6160-104					
308205-01	93		7875-001	J17HH4	95.1
308205-02	93		7875-002	J17HH5	46.4
308205-03	93		7875-003	Lab Control Sample	ok
308205-04	93		7875-004	Method Blank	U
308205-05	93		7875-005	Duplicate (R808205-02)	ok
ominal values and limits from method				RDLs (pCi/g)	15.0
18-7 Burial Ground - Other Solid					

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6160-104			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 104													
308205-01	93		J17HH4	5.21	0.100			68		100			11	09/05/08	09/08	GRB-101
308205-02	93		J17HH5	5.34	0.100			56		100			11	09/05/08	09/08	GRB-109
308205-03	93		Lab Control Sample	6.94	0.100			59		100				09/05/08	09/08	GRB-103
308205-04	93		Method Blank	5.17	0.100			60		100				09/05/08	09/08	GRB-104
308205-05	93		Duplicate (R808205-02)	5.67	0.100			56		100			11	09/05/08	09/08	GRB-110
ominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 5.67 ± 1.48
RESIDUE 60 ± 10

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1306

Test GAM Matrix SOLID	Client Hanford
SDG 7875	Contract No. S00W235A00
Contact Melissa C. Mannion	Contract SDG K1306

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

ESULTS

AB MPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
eparation batch 6160-104								
08205-01			7875-001	J17HH4	U		U	
08205-02			7875-002	J17HH5	U		U	
08205-03			7875-003	Lab Control Sample	ok		ok	
08205-04			7875-004	Method Blank	U		U	
08205-05			7875-005	Duplicate (R808205-02)	-	U	-	U
minal values and limits from method				RDLs (pCi/g)	0.050		0.100	
8-7 Burial Ground - Other Solid								

ETHOD PERFORMANCE

AB MPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6160-104			2σ prep error 7.0 % Reference Lab Notebook #6160, pg. 104													
08205-01			J17HH4	7.68	57.0					1055			7	09/04/08	09/04	PD,02,00
08205-02			J17HH5	24.0	44.3					1055			7	09/04/08	09/04	PD,06,00
08205-03			Lab Control Sample	0.134	44.0					1055				09/04/08	09/04	PD,08,00
08205-04			Method Blank	14.2	44.0					403				09/04/08	09/05	PD,02,00
08205-05			Duplicate (R808205-02)	40.0	44.3					404			8	09/04/08	09/05	PD,06,00
minal values and limits from method				0.050	44.0					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-100	Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD	MDA 17.2	± 30.9
FOR 5 SAMPLES	YIELD	±

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

SDG 7875
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1306

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

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

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

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

SDG 7875
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1306

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

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

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

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

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

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Contract No. S00W235A00
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WORK SUMMARY

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

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

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

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

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

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

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

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

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

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

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

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

The following values are underlined to indicate possible problems:

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

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GUIDE, cont.

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DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

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

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

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

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

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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DUPLICATE

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

* The RPD is underlined if it is greater than either limit.

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

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

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

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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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MATRIX SPIKE

for the recovery.

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

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

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METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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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.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-084	Page 1 of 1

Collector R. Kerkow / 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 Main Trench Floor Loc - A K1306		**SAF No.** RC-088
Ice Chest No. SMC-531	**Field Logbook No.** EL-1395-13	**COA** RG61872600 (7875)	**Method of Shipment** FED EX
Shipped To EBERLINE SERVICES/ LIONVILLE	**Offsite Property No.** A080 332		**Bill of Lading/Air Bill No.** SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination

Special Handling and/or Storage

None

Preservation	None	None	Cool 4C	None							
Type of Container	G/P	P	P	P							
No. of Container(s)	1	3	2	2							
Volume	30g	30g	30g	30g							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Ignitability - 1010 R.F. 8.28.08	IC Anions - 300.0	See item (2) in Special Instructions.							
Sample No.	Matrix *	Sample Date	Sample Time								
J17HH4	OTHER	8-28-08	0925				X				
J17HH5	OTHER	8-28-08	0950				X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: SDEETER	1020 08-28-08	Received By/Stored In: R. Falbery R. Falbery	1030 8-28-08
Relinquished By/Removed From: R. Falbery R. Falbery	1120 8-28-08	Received By/Stored In: 1060, 1A	1120 8-28-08
Relinquished By/Removed From: 1060/1A	1255 8-28-08	Received By/Stored In: J.E. Bernhard	1255 8-28-08
Relinquished By/Removed From: J.E. Bernhard	1300 8-28-08	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX		Received By/Stored In:	08/29/08 09:15
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc, 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

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

mks

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

AK 8/29/08

Client: W-C. HANFORD City RICHLAND State WA

Date/Time received 08/29/08 04:15 CoC No. RC-088-084

Container I.D. No. SMC-531 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

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 2 Sample Matrix X SOLID

7 Number of containers per sample 2 (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 08/29/08 Time: 10:45

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 10/1/08

Form SOP-02, 07-30-07

"over 55 years of quality nuclear services"

LIONVILLE LABORATORY INC.

15 October 2008

RECEIVED OCT 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 #	0808L144
SDG #	K1306
SAF #	RC-088
Date Received	8/29/08
# Samples	2
Matrix	OTHER
Volatiles	
Semivolatiles	
Pest/PCB	
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:\b_ltrs.doc

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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

RECEIVED
OCT 2008

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17HH4						
% SOLIDS	001	S	08L%S071	08/28/08	09/03/08	09/03/08
% SOLIDS	001 REP	S	08L%S071	08/28/08	09/03/08	09/03/08
BROMIDE BY IC	001	S	08LICS65	08/28/08	09/05/08	09/05/08
BROMIDE BY IC	001 REP	S	08LICS65	08/28/08	09/05/08	09/05/08
BROMIDE BY IC	001 MS	S	08LICS65	08/28/08	09/05/08	09/05/08
CHLORIDE BY IC	001	S	08LICS65	08/28/08	09/05/08	09/05/08
CHLORIDE BY IC	001 REP	S	08LICS65	08/28/08	09/05/08	09/05/08
CHLORIDE BY IC	001 MS	S	08LICS65	08/28/08	09/05/08	09/05/08
FLUORIDE BY IC	001	S	08LICS65	08/28/08	09/05/08	09/05/08
FLUORIDE BY IC	001 REP	S	08LICS65	08/28/08	09/05/08	09/05/08
FLUORIDE BY IC	001 MS	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRITE BY IC	001	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRITE BY IC	001 REP	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRITE BY IC	001 MS	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRATE BY IC	001	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRATE BY IC	001 REP	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRATE BY IC	001 MS	S	08LICS65	08/28/08	09/05/08	09/05/08
PHOSPHATE BY IC	001	S	08LICS65	08/28/08	09/05/08	09/05/08
PHOSPHATE BY IC	001 REP	S	08LICS65	08/28/08	09/05/08	09/05/08
PHOSPHATE BY IC	001 MS	S	08LICS65	08/28/08	09/05/08	09/05/08
SULFATE BY IC	001	S	08LICS65	08/28/08	09/05/08	09/05/08
SULFATE BY IC	001 REP	S	08LICS65	08/28/08	09/05/08	09/05/08
SULFATE BY IC	001 MS	S	08LICS65	08/28/08	09/05/08	09/05/08
IGNITABILITY	001	S	08LFP025	08/28/08	09/02/08	09/02/08
J17HH5						
% SOLIDS	002	S	08L%S071	08/28/08	09/03/08	09/03/08
BROMIDE BY IC	002	S	08LICS65	08/28/08	09/05/08	09/05/08
CHLORIDE BY IC	002	S	08LICS65	08/28/08	09/05/08	09/05/08
FLUORIDE BY IC	002	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRITE BY IC	002	S	08LICS65	08/28/08	09/05/08	09/05/08
NITRATE BY IC	002	S	08LICS65	08/28/08	09/05/08	09/05/08
PHOSPHATE BY IC	002	S	08LICS65	08/28/08	09/05/08	09/05/08
SULFATE BY IC	002	S	08LICS65	08/28/08	09/05/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IGNITABILITY	002	S	08LFP025	08/28/08	09/02/08	09/02/08

LAB QC:

BROMIDE BY IC	MB1	S	08LICS65	N/A	09/05/08	09/05/08
BROMIDE BY IC	MB1 BS	S	08LICS65	N/A	09/05/08	09/05/08
CHLORIDE BY IC	MB1	S	08LICS65	N/A	09/05/08	09/05/08
CHLORIDE BY IC	MB1 BS	S	08LICS65	N/A	09/05/08	09/05/08
FLUORIDE BY IC	MB1	S	08LICS65	N/A	09/05/08	09/05/08
FLUORIDE BY IC	MB1 BS	S	08LICS65	N/A	09/05/08	09/05/08
NITRITE BY IC	MB1	S	08LICS65	N/A	09/05/08	09/05/08
NITRITE BY IC	MB1 BS	S	08LICS65	N/A	09/05/08	09/05/08
NITRATE BY IC	MB1	S	08LICS65	N/A	09/05/08	09/05/08
NITRATE BY IC	MB1 BS	S	08LICS65	N/A	09/05/08	09/05/08
PHOSPHATE BY IC	MB1	S	08LICS65	N/A	09/05/08	09/05/08
PHOSPHATE BY IC	MB1 BS	S	08LICS65	N/A	09/05/08	09/05/08
SULFATE BY IC	MB1	S	08LICS65	N/A	09/05/08	09/05/08
SULFATE BY IC	MB1 BS	S	08LICS65	N/A	09/05/08	09/05/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088 K1306
LVL#: 0808L144

W.O.#: 60049-001-001-0001-00
Date Received: 08-29-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 2 soil samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary. Elevated reporting limits for Fluoride, Nitrite and Phosphate are the result of the necessity to dilute the samples to diminish co-elution effects.

   Lionville Laboratory (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvL's sample acceptance policy.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits with the exception of Fluoride that was below the 80-120% control limits at 77.6%. Detection of Fluoride required 5 and 10 times dilutions.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit with the exception of Bromide, Chloride and sulfate that may be attributed to sample inhomogeneity.

9. Results for soil samples are reported on a dry weight basis.

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 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

njp\i08-144

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 13 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: Bromide, Chloride, Fluoride, **Method:** EPA300.0

Other: Nitrite, Nitrate, Phosphate, Sulfate **Method**

L-WI-034/B-01/01

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 K1306
LVL#: 0808L144

W.O.#: 60049-001-001-9999-00
Date Received: 08-29-08

Analyte:	**Observation:**
Ignitability	Samples J17HH4 and J17HH5 did not ignite. The samples were heated to approximately 220°F. p-Xylene was used to determined the accuracy of the flash point apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 80°F.

njp\i08-144.pt2

LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/10/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17HH4	% Solids	89.7		%	0.01	1.0
		Bromide by IC	149		MG/KG	25.5	10.0
		Chloride by IC	11900		MG/KG	5110	2000
		Fluoride by IC	25.5	u	MG/KG	25.5	10.0
		Nitrite by IC	25.5	u	MG/KG	25.5	10.0
		Nitrate by IC	108		MG/KG	25.5	10.0
		Phosphate by IC	25.5	u	MG/KG	25.5	10.0
		Sulfate by IC	216		MG/KG	25.5	10.0
-002	J17HH5	% Solids	75.8		%	0.01	1.0
		Bromide by IC	105		MG/KG	15.5	5.0
		Chloride by IC	6210	u	MG/KG	6210	2000
		Fluoride by IC	15.5	u	MG/KG	15.5	5.0
		Nitrite by IC	15.5	u	MG/KG	15.5	5.0
		Nitrate by IC	72.3		MG/KG	15.5	5.0
		Phosphate by IC	15.5	u	MG/KG	15.5	5.0
		Sulfate by IC	193		MG/KG	15.5	5.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/10/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LICS65-MB1	Bromide by IC	2.4	u	MG/KG	2.4	1.0
		Chloride by IC	2.4	u	MG/KG	2.4	1.0
		Fluoride by IC	2.4	u	MG/KG	2.4	1.0
		Nitrite by IC	2.41	u	MG/KG	2.41	1.0
		Nitrate by IC	2.41	u	MG/KG	2.41	1.0
		Phosphate by IC	2.4	u	MG/KG	2.4	1.0
		Sulfate by IC	2.4	u	MG/KG	2.4	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/10/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17HH4	Bromide by IC	1090	149	1070	87.5	20.0
		Chloride by IC	211000	11900	214000	92.7	4000
		Fluoride by IC	982	0.0	1070	91.6	20.0
		Nitrite by IC	1180	25.5 u	1070	109.9	20.0
		Nitrate by IC	994	108	1070	82.6	20.0
		Phosphate by IC	1070	25.5 u	1070	99.6	20.0
		Sulfate by IC	1240	216	1070	95.3	20.0
BLANK10	08LICS65-MB1	Bromide by IC	27.4	2.4 u	32.1	85.3	1.0
		Chloride by IC	26.5	2.4 u	32.1	82.5	1.0
		Fluoride by IC	24.9	2.4 u	32.1	77.6	1.0
		Nitrite by IC	26.6	2.41u	32.1	82.9	1.0
		Nitrate by IC	27.1	2.41u	32.1	84.5	1.0
		Phosphate by IC	29.5	2.4 u	32.1	91.7	1.0
		Sulfate by IC	27.8	2.4 u	32.1	86.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/10/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17HH4	% Solids	89.7	90.8	1.1	1.0
		Bromide by IC	149	105	34.9	10.0
		Chloride by IC	11900	17100	35.9	2000
		Fluoride by IC	25.5 u	27.0 u	NC	10.0
		Nitrite by IC	25.5 u	27.0 u	NC	10.0
		Nitrate by IC	108	27.0 u	NC	10.0
		Phosphate by IC	25.5 u	27.0 u	NC	10.0
		Sulfate by IC	216	85.3	86.7	10.0

Lionville Laboratory Use Only

208L144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

Washington Closure Hanford RC-088

Final Proj. Sampling Date

Proj# 60049-001-001-0001-00

Proj Contact/Phone#

Lionville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

Rec'd 8-29-08 Date Due 9-13-08 (9-26-08)

		A		BC		DF			
Refrigerator #		2		2		2			
#/Type Container	Liquid								
	Solid	1C		2G		3G			
Volume		30g		30g		30g			
Preservatives		—		—		—			
ANALYSES REQUESTED	ORGANIC: VOA, BNA, Pest/PCB, Herb	INORG: TC Metal, TC, CN		TC, NO2, NO3		SO4, PO4			
Lionville Laboratory Use Only		Metal (1)		IC (1)		IIEN			

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J17HH4			Soil	8-28-08	0925							X		X		X		
002	1 5			1	1	0950							X		X		X		

Special Instructions:

Metal (1) = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, Ti, U, Zr

IC (1) = Br, Cl, F, NO2, NO3, PO4, SO4

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[signature]	8/29/08	0945

Relinquished by	Received by	Date	Time

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

000000011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-084 | Page 1 of 1

ector . Kerkow / S. Deeter	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 7 03	Data Turnaround 15 Days		
ect Designation 18-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground Main Trench Floor Loc - A		SAF No. RC-088
Chest No. AFS -04-023	Field Logbook No. EL-1395-13	COA RG61872600	Method of Shipment FED EX
ped To BERLINE SERVICES / LIONVILLE	Offsite Property No. A080342		Bill of Lading/Air Bill No. SEE OSPC

SSIBLE SAMPLE HAZARDS/REMARKS

ential Radioactive contamination

ecial Handling and/or Storage

ne

Preservation	None	None	Cool 4C	None							
Type of Container	G/P	P	P	P							
No. of Container(s)	1	3	2	2							
Volume	30g	30g	30g	30g							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Ignitability - 1010	IC Anions - 300.0	See item (2) in Special Instructions.							

Sample No.	Matrix *	Sample Date	Sample Time										
-IH4	OTHER	8·28·08	0925	X	X	X							
-IH5	OTHER	8·28·08	0950	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
quished By/Removed From	Date/Time 1030	Received By/Stored In	Date/Time 1030
DEETER	08-28-08	R. Fellers	8·28·08
quished By/Removed From	Date/Time 1120	Received By/Stored In	Date/Time 1120
Fellers R. Fellers	8·28·08	1060, 1-A	8-28-08
quished By/Removed From	Date/Time 1255	Received By/Stored In	Date/Time 1255
60/1A	8-28-08	J. E. Bernhard	8-28-08
quished By/Removed From	Date/Time 1300	Received By/Stored In	Date/Time
E. Bernhard	8-28-08	FED EX	
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	8/29/08 0945		8/29/08 0945
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc, 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

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
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

ORATORY ECTION	Received By	Title	Date/Time
AL SAMPLE POSITION	Disposal Method	Disposed By	Date/Time

-EE-011

000000012

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford

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

Date: 8/29/08

LvLI Batch #: 0808L144

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 791945022833
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 4.3°	°C	Cooler # AFS-04-023
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 LABORATORY INC

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

RECEIVED OCT 2008

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17HH4						
SILVER, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
SILVER, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
SILVER, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
ALUMINUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
ALUMINUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
ALUMINUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
ARSENIC, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
ARSENIC, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
ARSENIC, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
BORON, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
BORON, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
BORON, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
BARIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
BARIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
BARIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
BISMUTH, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
BISMUTH, TOTAL REP	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
BISMUTH, TOTAL SPIKE	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
CALCIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
CALCIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
CALCIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
CADMIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
CADMIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
CADMIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
COBALT, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
COBALT, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
COBALT, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
CHROMIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
CHROMIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
CHROMIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
COPPER, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
COPPER, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
IRON, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
IRON, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
IRON, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
MERCURY, TOTAL	001	S	08C0150	08/28/08	09/02/08	09/03/08
MERCURY, TOTAL	001 REP	S	08C0150	08/28/08	09/02/08	09/03/08
MERCURY, TOTAL	001 MS	S	08C0150	08/28/08	09/02/08	09/03/08
POTASSIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
POTASSIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
POTASSIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
LITHIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
LITHIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
LITHIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
MANGANESE, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
MANGANESE, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
MANGANESE, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
MOLYBDENUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
MOLYBDENUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
MOLYBDENUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
SODIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
SODIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
SODIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
NICKEL, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
NICKEL, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
NICKEL, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
PHOSPHORUS, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
PHOSPHORUS, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
PHOSPHORUS, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
LEAD, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
LEAD, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
LEAD, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
ANTIMONY, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
ANTIMONY, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
ANTIMONY, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
SELENIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
SELENIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
SILICON, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
SILICON, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
SILICON, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
TIN, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
TIN, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
TIN, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
STRONTIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
STRONTIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
STRONTIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
TITANIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
TITANIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
TITANIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
THALLIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
THALLIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
THALLIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
URANIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
URANIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
URANIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
VANADIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
VANADIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
VANADIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
ZINC, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
ZINC, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
ZINC, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	001	S	08L0323	08/28/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	001 REP	S	08L0323	08/28/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	001 MS	S	08L0323	08/28/08	09/04/08	09/05/08
J17HH5						
SILVER, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
ALUMINUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
ARSENIC, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
BORON, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
BARIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BISMUTH, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
CALCIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
CADMIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
COBALT, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
CHROMIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
COPPER, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
IRON, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
MERCURY, TOTAL	002	S	08C0150	08/28/08	09/02/08	09/03/08
POTASSIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
LITHIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
MANGANESE, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
MOLYBDENUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
SODIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
NICKEL, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
PHOSPHORUS, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
LEAD, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
ANTIMONY, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
SELENIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
SILICON, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
TIN, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
STRONTIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
TITANIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
THALLIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
URANIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
VANADIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
ZINC, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	002	S	08L0323	08/28/08	09/04/08	09/08/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
SILVER, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
ALUMINUM LABORTORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
ALUMINUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
ARSENIC LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
ARSENIC, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
BORON LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BORON, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
BARIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
BARIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
BERYLLIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
BISMUTH, LCS	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
BISMUTH, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
CALCIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
CALCIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
CADMIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
CADMIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
COBALT LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
COBALT, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
CHROMIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
CHROMIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
COPPER LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
COPPER, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
IRON LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
IRON, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
MERCURY LABORATORY	LC1 BS	S	08C0150	N/A	09/02/08	09/03/08
MERCURY, TOTAL	MB1	S	08C0150	N/A	09/02/08	09/03/08
POTASSIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
POTASSIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
LITHIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
LITHIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
MAGNESIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
MANGANESE LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
MANGANESE, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
MOLYBDENUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
SODIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
SODIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
NICKEL LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
NICKEL, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
PHOSPHORUS LCS	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
PHOSPHORUS, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
LEAD LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1306

DATE RECEIVED: 08/29/08 LVL LOT # :0808L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
ANTIMONY LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
ANTIMONY, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
SELENIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
SELENIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
SILICON LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
SILICON, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
TIN LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
TIN, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
STRONTIUM LCS STANDA	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
STRONTIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
TITANIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
TITANIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
THALLIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
THALLIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
URANIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
URANIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
VANADIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
VANADIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
ZINC LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
ZINC, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0323	N/A	09/04/08	09/05/08
ZIRCONIUM, TOTAL	MB1	S	08L0323	N/A	09/04/08	09/05/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088
LVL#: 0808L144
SDG/SAF#: K1306/RC-088

W.O.#: 60049-001-001-0001-00
Date Received: 08-29-08

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.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 2 soil samples.

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

   The samples were run with 3-fold dilutions for ICP Metals due to sample matrix. Sample J17HH5 was rerun with a 6-fold dilution for Silver, Iron, Lead, Antimony, and Tin due to sample matrix. Sample J17HH4 was rerun with a 12-fold dilution for Lead due to high concentration. Sample J17HH5 was rerun with a 100-fold dilution for Zirconium due to high concentration.

   The sample was run on a different instrument in file PS0905B for Phosphorous.

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 TA0905A. The samples were rerun for Sodium and Potassium in file PS0905B, along with Phophorous.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), sample results were greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

8. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of

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 23 pages.

Silicon (43.4%). Sample results may be biased low. Refer to the Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for 13 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J17HH4	Aluminum	60,000	87.3
	Calcium	60,000	113.2
	Chromium	300	115.5
	Iron	60,000	115.1
	Copper	300	87.5
	Antimony	300	105.6
	Zinc	300	122.9
	Manganese	3,000	114.8
	Nickel	3,300	113.0
	Titanium	3,300	105.8
	Silicon	3,300	104.3
	Lead	6,000	116.8

11. The duplicate analyses for 18 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. 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.

13. 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.

14. 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

9/15/08
Date

alm/m08-144

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within th

Lot#: 0808L44

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	✓6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	✓6010B [1]		__200.7 [1]			__1620	__99
Boron	✓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

Other: Phosphorous Method: 6010B

LV000000010

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 09/08/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17HH4	Silver, Total	0.40		MG/KG	0.28	3.0
		Aluminum, Total	30800		MG/KG	11.3	3.0
		Arsenic, Total	37.4		MG/KG	1.4	3.0
		Boron, Total	5.9		MG/KG	1.4	3.0
		Barium, Total	125		MG/KG	0.28	3.0
		Beryllium, Total	0.41		MG/KG	0.14	3.0
		Bismuth, Total	8.1		MG/KG	1.7	3.0
		Calcium, Total	8190		MG/KG	11.3	3.0
		Cadmium, Total	0.71		MG/KG	0.14	3.0
		Cobalt, Total	8.0		MG/KG	0.57	3.0
		Chromium, Total	74.7		MG/KG	0.57	3.0
		Copper, Total	146		MG/KG	0.57	3.0
		Iron, Total	19700		MG/KG	12.8	3.0
		Mercury, Total	1.1		MG/KG	0.01	1.0
		Potassium, Total	572		MG/KG	140	3.0
		Lithium, Total	13.6		MG/KG	0.11	3.0
		Magnesium, Total	3360		MG/KG	7.1	3.0
		Manganese, Total	250		MG/KG	0.11	3.0
		Molybdenum, Total	9.1		MG/KG	0.85	3.0
		Sodium, Total	1140		MG/KG	5.7	3.0
		Nickel, Total	551		MG/KG	0.57	3.0
		Phosphorus, Total	775		MG/KG	14.2	3.0
		Lead, Total	103000		MG/KG	3.4	12.0
		Antimony, Total	10.3		MG/KG	0.85	3.0
		Selenium, Total	1.7	u	MG/KG	1.7	3.0
		Silicon, Total	395		MG/KG	11.3	3.0
		Tin, Total	5.3		MG/KG	1.7	3.0
		Strontium, Total	68.6		MG/KG	0.09	3.0
		Titanium, Total	1630		MG/KG	0.28	3.0
		Thallium, Total	4.3		MG/KG	1.7	3.0
		Uranium, Total	299		MG/KG	5.7	3.0
		Vanadium, Total	51.5		MG/KG	0.40	3.0
		Zinc, Total	136		MG/KG	1.7	3.0
		Zirconium, Total	72.0		MG/KG	14.2	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/08/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J17HH5	Silver, Total	0.73 u	MG/KG	0.73	6.0
		Aluminum, Total	6880	MG/KG	14.5	3.0
		Arsenic, Total	2.8	MG/KG	1.8	3.0
		Boron, Total	5.5	MG/KG	1.8	3.0
		Barium, Total	87.2	MG/KG	0.36	3.0
		Beryllium, Total	0.76	MG/KG	0.18	3.0
		Bismuth, Total	2.2 u	MG/KG	2.2	3.0
		Calcium, Total	13100	MG/KG	14.5	3.0
		Cadmium, Total	0.68	MG/KG	0.18	3.0
		Cobalt, Total	10.4	MG/KG	0.73	3.0
		Chromium, Total	40.0	MG/KG	0.73	3.0
		Copper, Total	1280	MG/KG	0.73	3.0
		Iron, Total	25500	MG/KG	32.7	6.0
		Mercury, Total	0.46	MG/KG	0.01	1.0
		Potassium, Total	1050	MG/KG	179	3.0
		Lithium, Total	68.0	MG/KG	0.15	3.0
		Magnesium, Total	4770	MG/KG	9.1	3.0
		Manganese, Total	362	MG/KG	0.15	3.0
		Molybdenum, Total	4.0	MG/KG	1.1	3.0
		Sodium, Total	1230	MG/KG	7.3	3.0
		Nickel, Total	148	MG/KG	0.73	3.0
		Phosphorus, Total	63.3	MG/KG	18.2	3.0
		Lead, Total	637	MG/KG	2.2	6.0
		Antimony, Total	2.2 u	MG/KG	2.2	6.0
		Selenium, Total	2.2 u	MG/KG	2.2	3.0
		Silicon, Total	274	MG/KG	14.5	3.0
		Tin, Total	431	MG/KG	4.4	6.0
		Strontium, Total	118	MG/KG	0.11	3.0
		Titanium, Total	2510	MG/KG	0.36	3.0
		Thallium, Total	2.2 u	MG/KG	2.2	3.0
		Uranium, Total	86.9	MG/KG	7.3	3.0
		Vanadium, Total	70.1	MG/KG	0.51	3.0
		Zinc, Total	160	MG/KG	2.2	3.0
		Zirconium, Total	26200	MG/KG	605	100

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/08/08

CLIENT: WC-HANFORD RC-088 K1306

LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0323-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	5.6	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Boron, 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
		Bismuth, Total	0.60 u	MG/KG	0.60	1.0
		Calcium, Total	6.1	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	10.6	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Lithium, Total	0.06	MG/KG	0.04	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	31.4	MG/KG	2.0	1.0
		Nickel, Total	0.28	MG/KG	0.20	1.0
		Phosphorus, Total	5.0 u	MG/KG	5.0	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
		Silicon, Total	4.0 u	MG/KG	4.0	1.0
		Tin, Total	0.60 u	MG/KG	0.60	1.0
		Strontium, Total	0.04	MG/KG	0.03	1.0
		Titanium, Total	0.11	MG/KG	0.10	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
		Uranium, Total	2.0 u	MG/KG	2.0	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.68	MG/KG	0.60	1.0
		Zirconium, Total	5.0 u	MG/KG	5.0	1.0
BLANK1	08C0150-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/08/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17HH4	Silver, Total	5.0	0.40	4.7	97.9	3.0
		Aluminum, Total	33400	30800	189	1350 *	3.0
		Arsenic, Total	190	37.4	189	81.0	3.0
		Boron, Total	94.8	5.9	94.5	94.1	3.0
		Barium, Total	295	125	189	90.1	3.0
		Beryllium, Total	5.1	0.41	4.7	99.8	3.0
		Bismuth, Total	455	8.1	472	94.5	3.0
		Calcium, Total	12100	8190	2360	164.7	3.0
		Cadmium, Total	5.8	0.71	4.7	108.4	3.0
		Cobalt, Total	55.0	8.0	47.3	99.4	3.0
		Chromium, Total	241	74.7	18.9	880.4	3.0
		Copper, Total	162	146	23.6	67.4*	3.0
		Iron, Total	26900	19700	94.5	7585 *	3.0
		Mercury, Total	1.4	1.1	0.16	154.3*	1.0
		Potassium, Total	3010	572	2360	103.2	3.0
		Lithium, Total	113	13.6	94.5	105.2	3.0
		Magnesium, Total	6300	3360	2360	124.4	3.0
		Manganese, Total	362	250	47.3	236.2*	3.0
		Molybdenum, Total	101	9.1	94.5	97.2	3.0
		Sodium, Total	3530	1140	2360	101.0	3.0
		Nickel, Total	378	551	47.3	-370. *	3.0
		Phosphorus, Total	1300	775	472	111.4	3.0
		Lead, Total	4830	103000	47.3	10000. *	12.0
		Antimony, Total	25.9	10.3	47.3	33.0	3.0
		Selenium, Total	158	1.7 u	189	83.9	3.0
		Silicon, Total	698	395	94.5	320.8*	3.0
		Tin, Total	95.6	5.3	94.5	95.6	3.0
		Strontium, Total	169	68.6	94.5	106.0	3.0
		Titanium, Total	2080	1630	94.5	474.7*	3.0
		Thallium, Total	182	4.3	189	94.0	3.0
		Uranium, Total	705	299	472	86.1	3.0
		Vanadium, Total	106	51.5	47.3	115.6	3.0
		Zinc, Total	219	136	47.3	175.9	3.0
		Zirconium, Total	428	72.0	472	75.2	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/08/08

CLIENT: WC-HANFORD RC-088 K1306 LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17HH4	Silver, Total	0.40	0.41	4.3	3.0
		Aluminum, Total	30800	24800	21.5	3.0
		Arsenic, Total	37.4	4.0	161.4	3.0
		Boron, Total	5.9	5.2	12.6	3.0
		Barium, Total	125	122	2.4	3.0
		Beryllium, Total	0.41	0.50	20.2	3.0
		Bismuth, Total	8.1	1.8 u	NC	3.0
		Calcium, Total	8190	8580	4.6	3.0
		Cadmium, Total	0.71	0.80	12.1	3.0
		Cobalt, Total	8.0	9.3	15.0	3.0
		Chromium, Total	74.7	82.3	9.7	3.0
		Copper, Total	146	115	23.8	3.0
		Iron, Total	19700	24900	23.5	3.0
		Mercury, Total	1.1	1.3	13.9	1.0
		Potassium, Total	572	900	44.6	3.0
		Lithium, Total	13.6	17.2	23.4	3.0
		Magnesium, Total	3360	4130	20.5	3.0
		Manganese, Total	250	330	27.5	3.0
		Molybdenum, Total	9.1	10.9	18.0	3.0
		Sodium, Total	1140	622	59.0	3.0
		Nickel, Total	551	311	55.7	3.0
		Phosphorus, Total	775	929	18.0	3.0
		Lead, Total	103000	4240	184.1	12.0
		Antimony, Total	10.3	1.4	152.1	3.0
		Selenium, Total	1.7 u	1.8 u	NC	3.0
		Silicon, Total	395	389	1.6	3.0
		Tin, Total	5.3	7.0	27.6	3.0
		Strontium, Total	68.6	65.5	4.6	3.0
		Titanium, Total	1630	2050	22.6	3.0
		Thallium, Total	4.3	1.8 u	NC	3.0
		Uranium, Total	299	750	86.1	3.0
		Vanadium, Total	51.5	60.8	16.6	3.0
		Zinc, Total	136	227	50.5	3.0
		Zirconium, Total	72.0	103	35.8	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/08/08

CLIENT: WC-HANFORD RC-088 K1306

LVL LOT #: 0808L144

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0323-LC1	Silver, LCS	48.0	50.0	MG/KG	96.0
		Aluminum, LCS	472	500	MG/KG	94.4
		Arsenic, LCS	956	1000	MG/KG	95.6
		Boron, LCS	457	500	MG/KG	91.4
		Barium, LCS	464	500	MG/KG	92.8
		Beryllium, LCS	24.5	25.0	MG/KG	98.0
		Bismuth, LCS	470	500	MG/KG	94.0
		Calcium, LCS	2510	2500	MG/KG	100.5
		Cadmium, LCS	24.5	25.0	MG/KG	98.0
		Cobalt, LCS	244	250	MG/KG	97.5
		Chromium, LCS	49.4	50.0	MG/KG	98.8
		Copper, LCS	118	125	MG/KG	94.2
		Iron, LCS	489	500	MG/KG	97.7
		Potassium, LCS	2290	2500	MG/KG	91.7
		Lithium, LCS	486	500	MG/KG	97.2
		Magnesium, LCS	2390	2500	MG/KG	95.5
		Manganese, LCS	74.1	75.0	MG/KG	98.8
		Molybdenum, LCS	480	500	MG/KG	96.0
		Sodium, LCS	2390	2500	MG/KG	95.5
		Nickel, LCS	196	200	MG/KG	98.1
		Phosphorus, LCS	447	500	MG/KG	89.3
		Lead, LCS	246	250	MG/KG	98.3
		Antimony, LCS	279	300	MG/KG	93.1
		Selenium, LCS	903	1000	MG/KG	90.3
		Silicon, LCS	217	500	MG/KG	43.4
		Tin, LCS	494	500	MG/KG	98.9
		Strontium, LCS	466	500	MG/KG	93.2
		Titanium, LCS	476	500	MG/KG	95.2
		Thallium, LCS	956	1000	MG/KG	95.6
		Uranium, LCS	463	500	MG/KG	92.6
		Vanadium, LCS	240	250	MG/KG	95.9
		Zinc, LCS	98.2	100	MG/KG	98.2
		Zirconium, LCS	477	500	MG/KG	95.3
LCS1	08C0150-LC1	Mercury, LCS	4.9	4.7	MG/KG	105.0

Lionville Laboratory Incorporated

Logbook #: 10

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0323
Date/Time Initiated: 9/4/08 1800
Date/Time Completed: 9/4/08 2300
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See Worksheet

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 94°

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
(3050B)
3051

DW 200.7 (1994)
200.9
3113B

MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)

SM 3030C (NC)

CLP ILMO3.0
ILMO4.0

Other Tyler

TM

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
0808L144-001		1.18gm	100ml	<2	TO	coarse	black soil	rocks	RAD
001R		1.13gm							
001S	1.0 ml *	1.18gm							
002		1.09gm					brown soil	tinguin	
0808L076-001		1.29gm						rocks	
001R		1.10gm							
001S	**	1.31gm							
08L0323-MB1		1.0gm					coating dips		
LCS	1.0 ml *	1.0gm							

MW 9/4/08

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

Reagent IDs:
HNO_3 G07057
HCL G15040
H_2O_2 G15A18
1:1 HNO_3 9789-083-08
1:1 HCL

File ID#: IC032301
IC032302

LIMS Transfer: (Y) N updated

Data Review By/Date: PMP, 09/05/08

* also 0.5ml 6072-076-11 (Bi)
0.5ml 6072-079-14 (P-) ← ** only 0.5ml P- added
0.5ml 6072-078-01 (U-)
0.5ml 6072-079-13 (Zr)

L-SPI-3020-A-0601

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: EID
Date 9/2/08
Start Time/Temp: 1610 | 95°
End Time/Temp: 1640 | 97°

Instrument ID H63.1
Balance #: B29 NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0150
Worksheet: Hg090301|09
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.
Blank	E			10mL	50mL	
0.2 µg/L	JC	0.100				
1.0	LC3	0.500				
2.0	KX	1.000				
5.0	A901	2.500				
10.0	1721	5.000				
ICV	6J	0.125	2.5			
CCV	205	0.250	5.0			
ICB/CCB	X0					
MB1	A1			0.30		PBS/150 9.80L 100.0
LC1	H2	*	*	0.31		LCSS/150
0808L118-001	UT	moved to a different batch Tm 9/3/08				
~~002~~	NR					
0808L135-001	411			0.38		R
001R	N2			0.30		
001S	40	0.0500	10.0	0.38		
002	F2			0.32		
003	886			0.31		
0808L137-001	M1			0.30		
001R	WK			0.34		
001S	C48	0.0500	10.0	0.30		
002	NJ			0.35		
003	J1			0.30		R
004	NB			0.37		
005	CB			0.30		R
006	CM			0.36		
007	Gd			0.38		

Standard:	ID	Prep Date/Time
ICAL/MS	R1 6072-78-14B	9/2/08 1030
ICV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date: [signature] 9/5/08

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: TLB
Date 9/2/08
Start Time/Temp: 1500
End Time/Temp: 005

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

Prep Batch: 08C0150
Worksheet: HG090301/09
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.
0808L137-008	31			0.30	50mL	100.00
009	N4			0.31		R
010	HW			0.31		
011	AIR			0.36		
012	76			0.31		R
0808L144-001	11A			0.34		89.72
001R	AP			0.36		
001S	RU	0.500	1.0	0.34		
002	81G			0.30		75.75

on 9/2/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 005	

Reviewed By/Date: [signature] 9/5/08

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

ville Laboratory Use Only

708L144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000021

t Washington Closure Hanford RC-088

Final Proj. Sampling Date

ct# 60049-001-001-0001-00

ct Contact/Phone#

lle Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

Rec'd 8-29-08 Date Due 9-13-08 (9-26-08)

		A	BC	DF
Refrigerator #		2	2	2
#/Type Container	Liquid			
	Solid	1C	2G	3G
Volume		30g	30g	30g
Preservatives		—	—	—

ANALYSES REQUESTED →

ORGANIC				INORG				
VOA	BNA	Pest/PCB	Herb	TC Metal Hg	CN	IC Anions	TS, Ni, TAB	

Lionville Laboratory Use Only

	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Metals	IC	ITEN
	001	J17HH4			Soil	8-28-08	0925	X	X	X
	002	1 5			1	1	0950	X	X	X

Matrix: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, TP/TCLP, Leachate, Wipe, Other, Ash

ial Instructions:

met ① = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, Ti, U, Zr

IC ① = Br, Cl, Fl, NO2, NO3, PO4, SO4

Special Instructions:

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

Relinquished by	Received by	Date	Time
JE	[signature]	8/29/08	0945

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-088-084 | Page 1 of 1

ector . Kerkow / S. Deeter	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 7	Data Turnaround 15 Days		
ect Designation 18-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground Main Trench Floor Loc - A		SAF No. RC-088
Chest No. AFS -04-023	Field Logbook No. EL-1395-13	COA RG61872600	Method of Shipment FED EX
ped To BERLINE SERVICES / LIONVILLE	Offsite Property No. A080342		Bill of Lading/Air Bill No. SEE OSPC

000000022

SSIBLE SAMPLE HAZARDS/REMARKS

ential Radioactive contamination

ecial Handling and/or Storage

ne

Preservation	None	None	Cool 4C	None							
Type of Container	G/P	P	P	P							
No. of Container(s)	1	3	2	2							
Volume	30g	30g	30g	30g							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Ignitability - 1010	IC Anions - 300.0	See item (2) in Special Instructions. TK 8-28-08							

Sample No.	Matrix *	Sample Date	Sample Time										
HH4	OTHER	8·28·08	0925	X	X	X							
HH5	OTHER	8·28·08	0950	X	X	X							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S. DEETER	1030 08-28-08	R. Fellers	1030 8-28-08
R. Fellers	1120 8-28-08	1040, 1-A	1120 8-28-08
6011A	1255 8-28-08	J. R. Bernhard	1255 8-28-08
E. Bernhard	1300 8-28-08	FED EX	
	8/29/08 0945		8/29/08 0945

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc, 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

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
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

ORATORY ECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

4-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford

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

Date: 8/29/04

LvLI Batch #: 0808L144

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 79194502 2833
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 4.3°	°C	Cooler # AFS-04-023
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 LABORATORY INC.