0079357

SAF-RC-113
618-7 Burial Ground
Verification Sampling
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 11/10/08 Initials/Date
Kathy Wendt	H4-21	KW 11/10/08 Initials/Date

COMMENTS:

SDG K1395 **SAF-RC-113**

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground – Verif. Sampling

RECEIVED
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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

October 23, 2008

RECEIVED
OCT 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-10-136-7727, SDG K1395

Dear Ms. Kessner:

Enclosed is the data report for eleven solid (soil) samples designated under SAF No.RC-113 received at Eberline Services on October 17, 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 K1395 was composed of eleven solid (soil) samples designated under SAF No. RC-113 with a Project Designation of: 618-7 Burial Grounds Verification Sampling.

The samples were received as stated on the chain-of-custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on October 23, 2008.

2.0 ANALYSIS NOTES

2.1 Isotopic Thorium Analysis

The Th-22 tracer yields for samples J17J32 and J17R51 were 115% and 107% respectively; both were greater than the upper control limit of 105%. No other problems were encountered during the course of the analyses.

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

MCM
10/~~25~~ 24/08

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 K1395

SDG 7727	Client Hanford
Contact Melissa C. Mannion	Contract No. S00W235A00
	Case no SDG_K1395

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

Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

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 10/24/08

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

SDG 7727
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R810136-01	J17J31	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 09:30
R810136-02	J17J32	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 09:45
R810136-03	J17R51	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 08:30
R810136-04	J17R29	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 10:15
R810136-05	J17R30	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 08:55
R810136-06	J17R31	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 08:40
R810136-07	J17R32	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 09:30
R810136-08	J17R33	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 09:45
R810136-09	J17R34	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 10:30
R810136-10	J17R35	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 09:05
R810136-11	J17R36	618-7 BurialGrnd V.sampl	SOLID		RC-113	RC-113-010	10/15/08 09:15
R810136-12	Lab Control Sample		SOLID		RC-113		
R810136-13	Method Blank		SOLID		RC-113		
R810136-14	Duplicate (R810136-08)	618-7 BurialGrnd V.sampl	SOLID		RC-113		10/15/08 09:45

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

QC SUMMARY

SDG 7727
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7727	RC-113-010	J17J31	SOLID	97.4	950 g		10/17/08	2	R810136-01	7727-001
		J17J32	SOLID	90.5	967 g		10/17/08	2	R810136-02	7727-002
		J17R29	SOLID	94.2	722 g		10/17/08	2	R810136-04	7727-004
		J17R30	SOLID	98.0	727 g		10/17/08	2	R810136-05	7727-005
		J17R31	SOLID	98.4	987 g		10/17/08	2	R810136-06	7727-006
		J17R32	SOLID	98.3	683 g		10/17/08	2	R810136-07	7727-007
		J17R33	SOLID	97.1	734 g		10/17/08	2	R810136-08	7727-008
		J17R34	SOLID	97.7	808 g		10/17/08	2	R810136-09	7727-009
		J17R35	SOLID	98.5	731 g		10/17/08	2	R810136-10	7727-010
		J17R36	SOLID	98.2	820 g		10/17/08	2	R810136-11	7727-011
		J17R51	SOLID	97.9	953 g		10/17/08	2	R810136-03	7727-003
		Method Blank	SOLID						R810136-13	7727-013
		Lab Control Sample	SOLID						R810136-12	7727-012
		Duplicate (R810136-08)	SOLID	97.1	734 g		10/17/08	2	R810136-14	7727-014

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

SDG 7727
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
TH	SOLID	Thorium, Isotopic in Solids	6174-048	8.0	11			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6174-048	8.0	11			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6174-048	7.0	11			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 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

SDG 7727
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	MATRIX / SAF No	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R810136-01	J17J31		7727-001	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-001	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-001	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-02	J17J32		7727-002	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-002	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-002	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-03	J17R51		7727-003	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-003	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-003	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-04	J17R29		7727-004	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-004	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-004	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-05	J17R30		7727-005	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-005	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-005	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-06	J17R31		7727-006	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-006	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-006	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-07	J17R32		7727-007	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-007	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-007	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-08	J17R33		7727-008	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-008	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-008	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-09	J17R34		7727-009	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-009	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-009	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-10	J17R35		7727-010	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd	V.sampl SOLID	7727-010	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113	7727-010	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

SDG 7727
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R810136-11	J17R36			7727-011	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd V.sampl		SOLID	7727-011	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08	RC-113-010	RC-113		7727-011	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-12	Lab Control Sample			7727-012	GAM		10/20/08	10/21/08	CSS	Gamma Scan
			SOLID	7727-012	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
		RC-113		7727-012	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-13	Method Blank			7727-013	GAM		10/20/08	10/21/08	CSS	Gamma Scan
			SOLID	7727-013	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
		RC-113		7727-013	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids
R810136-14	Duplicate (R810136-08)			7727-014	GAM		10/20/08	10/21/08	CSS	Gamma Scan
10/15/08	618-7 BurialGrnd V.sampl		SOLID	7727-014	TH		10/23/08	10/23/08	BW	Thorium, Isotopic in Solids
10/17/08		RC-113		7727-014	U		10/22/08	10/22/08	BW	Uranium, Isotopic in Solids

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	RC-113	Gamma Scan	GAMMA_GS	11			1	1	1	14
TH	RC-113	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	11			1	1	1	14
U	RC-113	Uranium, Isotopic in Solids	UISO_PLATE_AEA	11			1	1	1	14
TOTALS				33			3	3	3	42

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-013 Method Blank

METHOD BLANK

SDG	7727	Client/Case no	Hanford	SDG K1395	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R810136-13	Client sample id	Method Blank		
Dept sample id	7727-013	Material/Matrix		SOLID	
		SAF No	RC-113		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.058	0.17	0.319	1.00	U	TH
Thorium 230	14269-63-7	0	0.17	0.276	1.00	U	TH
Thorium 232	TH-232	0	0.058	0.221	1.00	U	TH
Uranium 233/234	U-233/234	0.022	0.043	0.165	1.00	U	U
Uranium 235	15117-96-1	0	0.052	0.199	1.00	U	U
Uranium 238	U-238	0.086	0.086	0.165	1.00	U	U
Potassium 40	13966-00-2	U		0.408		U	GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	U		0.015	0.100	U	GAM
Radium 226	13982-63-3	U		0.033	0.100	U	GAM
Radium 228	15262-20-1	U		0.075	0.200	U	GAM
Europium 152	14683-23-9	U		0.043	0.100	U	GAM
Europium 154	15585-10-1	U		0.048	0.100	U	GAM
Europium 155	14391-16-3	U		0.040	0.100	U	GAM
Thorium 228	14274-82-9	U		0.025		U	GAM
Thorium 232	TH-232	U		0.075		U	GAM
Uranium 235	15117-96-1	U		0.066		U	GAM
Uranium 238	U-238	U		1.63		U	GAM
Americium 241	14596-10-2	U		0.090		U	GAM

618-7 Burial Ground Verif.Sampling

QC-BLANK #67714

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-012

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7727

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1395

Contract No. S00W235A00

Lab sample id R810136-12

Dept sample id 7727-012

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-113

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
Thorium 230	37.8	3.5	0.234	1.00		TH	37.8	1.5	100	81-119	80-120
Uranium 233/234	18.5	1.8	0.775	1.00		U	18.6	0.74	99	80-120	80-120
Uranium 235	14.4	1.5	0.170	1.00		U	15.1	0.60	95	80-120	80-120
Uranium 238	19.9	1.9	0.744	1.00		U	20.2	0.81	99	81-119	80-120
Cobalt 60	0.597	0.060	0.031	0.050		GAM	0.604	0.024	99	81-119	80-120
Cesium 137	0.706	0.054	0.037	0.100		GAM	0.682	0.027	104	83-117	80-120

618-7 Burial Ground Verif.Sampling

QC-LCS #67713

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-014 J17R33

DUPLICATE

SDG	7727			Client/Case no	Hanford SDG K1395
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R810136-14	Lab sample id	R810136-08	Client sample id	J17R33
Dept sample id	7727-014	Dept sample id	7727-008	Location/Matrix	618-7 BurialGrnd V.sampl SOLID
		Received	10/17/08	Collected/Weight	10/15/08 09:45 734 g
% solids	97.1	% solids	97.1	Custody/SAF No	RC-113-010 RC-113

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
Thorium 228	0.588	0.31	0.342	1.00		TH	0.718	0.36	0.431		20	110	0.5
Thorium 230	0.649	0.31	0.236	1.00		TH	0.449	0.30	0.286		36	119	0.9
Thorium 232	0.556	0.25	0.236	1.00		TH	0.538	0.24	0.229		3	97	0.1
Uranium 233/234	1.16	0.31	0.165	1.00		U	1.42	0.35	0.143		20	57	1.1
Uranium 235	0.156	0.10	0.200	1.00	U	U	0.045	0.045	0.173	U	-		2.0
Uranium 238	1.18	0.36	0.165	1.00		U	1.25	0.31	0.143		6	61	0.3
Potassium 40	10.0	0.65	0.368			GAM	11.2	0.47	0.230		11	19	1.8
Cobalt 60	U		0.034	0.050	U	GAM	U		0.021	U	-		0.6
Cesium 137	U		0.030	0.100	U	GAM	U		0.018	U	-		0.7
Radium 226	0.403	0.060	0.058	0.100		GAM	0.397	0.042	0.039		2	31	0.1
Radium 228	0.557	0.14	0.140	0.200		GAM	0.631	0.085	0.079		12	44	0.9
Europium 152	U		0.074	0.100	U	GAM	U		0.042	U	-		0.8
Europium 154	U		0.098	0.100	U	GAM	U		0.075	U	-		0.4
Europium 155	U		0.091	0.100	U	GAM	U		0.053	U	-		0.7
Thorium 228	0.564	0.037	0.036			GAM	0.529	0.026	0.023		6	19	1.0
Thorium 232	0.557	0.14	0.140			GAM	0.631	0.085	0.079		12	44	0.9
Uranium 235	U		0.124		U	GAM	U		0.074	U	-		0.7
Uranium 238	U		3.74		U	GAM	U		2.50	U	-		0.6
Americium 241	U		0.241		U	GAM	U		0.029	U	-		1.7

618-7 Burial Ground Verif.Sampling

QC-DUP#8 67715

Lab id	EBRLNE
Protocol	Hanford1
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-001 J17J31

DATA SHEET

SDG	7727	Client/Case no	Hanford SDG K1395
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R810136-01	Client sample id	J17J31
Dept sample id	7727-001	Location/Matrix	618-7 BurialGrnd V.sampl SOLID
Received	10/17/08	Collected/Weight	10/15/08 09:30 950 g
% solids	97.4	Custody/SAF No	RC-113-010 RC-113

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.410	0.30	0.357	1.00		TH
Thorium 230	14269-63-7	0.559	0.30	0.285	1.00		TH
Thorium 232	TH-232	0.447	0.23	0.285	1.00		TH
Uranium 233/234	U-233/234	0.827	0.22	0.115	1.00		U
Uranium 235	15117-96-1	0.073	0.058	0.111	1.00	U	U
Uranium 238	U-238	0.588	0.17	0.092	1.00		U
Potassium 40	13966-00-2	9.86	0.40	0.148			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.100	U	GAM
Radium 226	13982-63-3	0.321	0.039	0.038	0.100		GAM
Radium 228	15262-20-1	0.514	0.072	0.068	0.200		GAM
Europium 152	14683-23-9	U		0.049	0.100	U	GAM
Europium 154	15585-10-1	U		0.047	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	0.508	0.026	0.022			GAM
Thorium 232	TH-232	0.514	0.072	0.068			GAM
Uranium 235	15117-96-1	U		0.090		U	GAM
Uranium 238	U-238	U		2.35		U	GAM
Americium 241	14596-10-2	U		0.084		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-002 J17J32

DATA SHEET

SDG	7727	Client/Case no	Hanford	SDG K1395
Contact	Melissa C. Mannion	Contract	No. S00W235A00	
Lab sample id	R810136-02	Client sample id	J17J32	
Dept sample id	7727-002	Location/Matrix	618-7 BurialGrnd V.sampl	SOLID
Received	10/17/08	Collected/Weight	10/15/08 09:45	967 g
% solids	90.5	Custody/SAF No	RC-113-010	RC-113

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.294	0.35	0.449	1.00	U	TH
Thorium 230	14269-63-7	0.528	0.47	0.449	1.00		TH
Thorium 232	TH-232	0.762	0.48	0.449	1.00		TH
Uranium 233/234	U-233/234	0.336	0.21	0.198	1.00		U
Uranium 235	15117-96-1	0	0.063	0.240	1.00	U	U
Uranium 238	U-238	0.310	0.16	0.198	1.00		U
Potassium 40	13966-00-2	10.3	0.67	0.241			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	0.063	0.037	0.032	0.100		GAM
Radium 226	13982-63-3	0.354	0.047	0.042	0.100		GAM
Radium 228	15262-20-1	0.566	0.12	0.109	0.200		GAM
Europium 152	14683-23-9	U		0.065	0.100	U	GAM
Europium 154	15585-10-1	U		0.086	0.100	U	GAM
Europium 155	14391-16-3	U		0.061	0.100	U	GAM
Thorium 228	14274-82-9	0.604	0.036	0.034			GAM
Thorium 232	TH-232	0.566	0.12	0.109			GAM
Uranium 235	15117-96-1	U		0.101		U	GAM
Uranium 238	U-238	U		3.11		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-003 J17R51

DATA SHEET

SDG	7727	Client/Case no	Hanford SDG K1395
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R810136-03	Client sample id	J17R51
Dept sample id	7727-003	Location/Matrix	618-7 BurialGrnd V.sampl SOLID
Received	10/17/08	Collected/Weight	10/15/08 08:30 953 g
% solids	97.9	Custody/SAF No	RC-113-010 RC-113

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.147	0.24	0.362	1.00	U	TH
Thorium 230	14269-63-7	0.500	0.30	0.282	1.00		TH
Thorium 232	TH-232	0.147	0.12	0.225	1.00	U	TH
Uranium 233/234	U-233/234	9.23	1.2	0.236	1.00		U
Uranium 235	15117-96-1	0.448	0.24	0.229	1.00		U
Uranium 238	U-238	7.90	1.1	0.236	1.00		U
Potassium 40	13966-00-2	9.41	0.46	0.125			GAM
Cobalt 60	10198-40-0	U		0.022	0.050	U	GAM
Cesium 137	10045-97-3	U		0.019	0.100	U	GAM
Radium 226	13982-63-3	0.299	0.044	0.044	0.100		GAM
Radium 228	15262-20-1	0.366	0.098	0.097	0.200		GAM
Europium 152	14683-23-9	U		0.051	0.100	U	GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.058	0.100	U	GAM
Thorium 228	14274-82-9	0.444	0.028	0.027			GAM
Thorium 232	TH-232	0.366	0.098	0.097			GAM
Uranium 235	15117-96-1	0.463	0.11	0.132			GAM
Uranium 238	U-238	6.19	2.8	2.89			GAM
Americium 241	14596-10-2	U		0.044		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-004 J17R29

DATA SHEET

SDG	7727	Client/Case no	Hanford	SDG K1395	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R810136-04	Client sample id	J17R29		
Dept sample id	7727-004	Location/Matrix	618-7 BurialGrnd V.sampl	SOLID	
Received	10/17/08	Collected/Weight	10/15/08 10:15	722 g	
% solids	94.2	Custody/SAF No	RC-113-010	RC-113	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.563	0.32	0.385	1.00		TH
Thorium 230	14269-63-7	0.321	0.32	0.307	1.00		TH
Thorium 232	TH-232	0.522	0.32	0.307	1.00		TH
Uranium 233/234	U-233/234	0.570	0.25	0.230	1.00		U
Uranium 235	15117-96-1	0	0.073	0.278	1.00	U	U
Uranium 238	U-238	0.360	0.18	0.230	1.00		U
Potassium 40	13966-00-2	10.1	0.51	0.229			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	U		0.021	0.100	U	GAM
Radium 226	13982-63-3	0.326	0.039	0.036	0.100		GAM
Radium 228	15262-20-1	0.370	0.10	0.100	0.200		GAM
Europium 152	14683-23-9	U		0.045	0.100	U	GAM
Europium 154	15585-10-1	U		0.074	0.100	U	GAM
Europium 155	14391-16-3	U		0.055	0.100	U	GAM
Thorium 228	14274-82-9	0.420	0.028	0.025			GAM
Thorium 232	TH-232	0.370	0.10	0.100			GAM
Uranium 235	15117-96-1	U		0.075		U	GAM
Uranium 238	U-238	U		2.91		U	GAM
Americium 241	14596-10-2	U		0.032		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-005 J17R30

DATA SHEET

SDG	7727	Client/Case no	Hanford	SDG K1395	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R810136-05	Client sample id	J17R30		
Dept sample id	7727-005	Location/Matrix	618-7 BurialGrnd V.sampl	SOLID	
Received	10/17/08	Collected/Weight	10/15/08 08:55	727 g	
% solids	98.0	Custody/SAF No	RC-113-010	RC-113	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.528	0.35	0.448	1.00		TH
Thorium 230	14269-63-7	0.498	0.30	0.280	1.00		TH
Thorium 232	TH-232	0.410	0.24	0.224	1.00		TH
Uranium 233/234	U-233/234	0.418	0.22	0.168	1.00		U
Uranium 235	15117-96-1	0	0.053	0.204	1.00	U	U
Uranium 238	U-238	0.682	0.27	0.168	1.00		U
Potassium 40	13966-00-2	9.76	0.48	0.175			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	U		0.021	0.100	U	GAM
Radium 226	13982-63-3	0.355	0.043	0.039	0.100		GAM
Radium 228	15262-20-1	0.569	0.088	0.084	0.200		GAM
Europium 152	14683-23-9	U		0.052	0.100	U	GAM
Europium 154	15585-10-1	U		0.081	0.100	U	GAM
Europium 155	14391-16-3	U		0.046	0.100	U	GAM
Thorium 228	14274-82-9	0.491	0.029	0.026			GAM
Thorium 232	TH-232	0.569	0.088	0.084			GAM
Uranium 235	15117-96-1	U		0.086		U	GAM
Uranium 238	U-238	U		2.72		U	GAM
Americium 241	14596-10-2	U		0.034		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-006 J17R31

DATA SHEET

SDG	7727	Client/Case no	Hanford	SDG K1395	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R810136-06	Client sample id	J17R31		
Dept sample id	7727-006	Location/Matrix	618-7 BurialGrnd V.sampl	SOLID	
Received	10/17/08	Collected/Weight	10/15/08 08:40	987 g	
% solids	98.4	Custody/SAF No	RC-113-010	RC-113	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.384	0.30	0.363	1.00		TH
Thorium 230	14269-63-7	0.413	0.24	0.226	1.00		TH
Thorium 232	TH-232	0.443	0.24	0.226	1.00		TH
Uranium 233/234	U-233/234	10.9	1.2	0.270	1.00		U
Uranium 235	15117-96-1	0.974	0.30	0.186	1.00		U
Uranium 238	U-238	6.42	0.86	0.247	1.00		U
Potassium 40	13966-00-2	6.99	0.65	0.164			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.100	U	GAM
Radium 226	13982-63-3	0.212	0.043	0.039	0.100		GAM
Radium 228	15262-20-1	0.330	0.078	0.070	0.200		GAM
Europium 152	14683-23-9	U		0.044	0.100	U	GAM
Europium 154	15585-10-1	U		0.064	0.100	U	GAM
Europium 155	14391-16-3	U		0.065	0.100	U	GAM
Thorium 228	14274-82-9	0.327	0.025	0.021			GAM
Thorium 232	TH-232	0.330	0.078	0.070			GAM
Uranium 235	15117-96-1	0.114	0.064	0.087			GAM
Uranium 238	U-238	U		2.82		U	GAM
Americium 241	14596-10-2	U		0.069		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-007 J17R32

DATA SHEET

SDG	7727	Client/Case no	Hanford SDG K1395
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R810136-07	Client sample id	J17R32
Dept sample id	7727-007	Location/Matrix	618-7 BurialGrnd V.sampl SOLID
Received	10/17/08	Collected/Weight	10/15/08 09:30 683 g
% solids	98.3	Custody/SAF No	RC-113-010 RC-113

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.586	0.37	0.472	1.00		TH
Thorium 230	14269-63-7	0.555	0.31	0.236	1.00		TH
Thorium 232	TH-232	0.585	0.25	0.236	1.00		TH
Uranium 233/234	U-233/234	0.445	0.20	0.155	1.00		U
Uranium 235	15117-96-1	0.074	0.098	0.188	1.00	U	U
Uranium 238	U-238	0.324	0.16	0.155	1.00		U
Potassium 40	13966-00-2	9.53	0.69	0.322			GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	0.361	0.063	0.062	0.100		GAM
Radium 228	15262-20-1	0.595	0.14	0.146	0.200		GAM
Europium 152	14683-23-9	U		0.074	0.100	U	GAM
Europium 154	15585-10-1	U		0.112	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	0.444	0.040	0.041			GAM
Thorium 232	TH-232	0.595	0.14	0.146			GAM
Uranium 235	15117-96-1	U		0.122		U	GAM
Uranium 238	U-238	U		3.90		U	GAM
Americium 241	14596-10-2	U		0.234		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-008 J17R33

DATA SHEET

SDG	7727	Client/Case no	Hanford	SDG_K1395	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R810136-08	Client sample id	J17R33		
Dept sample id	7727-008	Location/Matrix	618-7 BurialGrnd V.sampl	SOLID	
Received	10/17/08	Collected/Weight	10/15/08 09:45	734 g	
% solids	97.1	Custody/SAF No	RC-113-010	RC-113	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.718	0.36	0.431	1.00		TH
Thorium 230	14269-63-7	0.449	0.30	0.286	1.00		TH
Thorium 232	TH-232	0.538	0.24	0.229	1.00		TH
Uranium 233/234	U-233/234	1.42	0.35	0.143	1.00		U
Uranium 235	15117-96-1	0.045	0.045	0.173	1.00	U	U
Uranium 238	U-238	1.25	0.31	0.143	1.00		U
Potassium 40	13966-00-2	11.2	0.47	0.230			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	0.397	0.042	0.039	0.100		GAM
Radium 228	15262-20-1	0.631	0.085	0.079	0.200		GAM
Europium 152	14683-23-9	U		0.042	0.100	U	GAM
Europium 154	15585-10-1	U		0.075	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	0.529	0.026	0.023			GAM
Thorium 232	TH-232	0.631	0.085	0.079			GAM
Uranium 235	15117-96-1	U		0.074		U	GAM
Uranium 238	U-238	U		2.50		U	GAM
Americium 241	14596-10-2	U		0.029		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-009 J17R34

DATA SHEET

SDG	7727	Client/Case no	Hanford	SDG_K1395	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R810136-09	Client sample id	J17R34		
Dept sample id	7727-009	Location/Matrix	618-7 BurialGrnd V.sampl	SOLID	
Received	10/17/08	Collected/Weight	10/15/08 10:30	808 g	
% solids	97.7	Custody/SAF No	RC-113-010	RC-113	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.783	0.36	0.393	1.00		TH
Thorium 230	14269-63-7	0.498	0.29	0.272	1.00		TH
Thorium 232	TH-232	0.640	0.29	0.272	1.00		TH
Uranium 233/234	U-233/234	1.11	0.29	0.152	1.00		U
Uranium 235	15117-96-1	0.048	0.048	0.184	1.00	U	U
Uranium 238	U-238	1.23	0.33	0.152	1.00		U
Potassium 40	13966-00-2	9.14	0.68	0.254			GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Radium 226	13982-63-3	0.313	0.048	0.042	0.100		GAM
Radium 228	15262-20-1	0.544	0.087	0.081	0.200		GAM
Europium 152	14683-23-9	U		0.063	0.100	U	GAM
Europium 154	15585-10-1	U		0.091	0.100	U	GAM
Europium 155	14391-16-3	U		0.057	0.100	U	GAM
Thorium 228	14274-82-9	0.506	0.035	0.032			GAM
Thorium 232	TH-232	0.544	0.087	0.081			GAM
Uranium 235	15117-96-1	U		0.095		U	GAM
Uranium 238	U-238	U		2.91		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-010 J17R35

DATA SHEET

SDG	7727	Client/Case no	Hanford	SDG K1395	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R810136-10	Client sample id	J17R35		
Dept sample id	7727-010	Location/Matrix	618-7 BurialGrnd V.sampl	SOLID	
Received	10/17/08	Collected/Weight	10/15/08 09:05	731 g	
% solids	98.5	Custody/SAF No	RC-113-010	RC-113	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.325	0.24	0.327	1.00	U	TH
Thorium 230	14269-63-7	0.443	0.24	0.226	1.00		TH
Thorium 232	TH-232	0.414	0.24	0.226	1.00		TH
Uranium 233/234	U-233/234	1.74	0.40	0.161	1.00		U
Uranium 235	15117-96-1	0.178	0.15	0.195	1.00	U	U
Uranium 238	U-238	1.47	0.35	0.161	1.00		U
Potassium 40	13966-00-2	10.1	0.58	0.218			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.020	0.100	U	GAM
Radium 226	13982-63-3	0.310	0.043	0.042	0.100		GAM
Radium 228	15262-20-1	0.498	0.091	0.089	0.200		GAM
Europium 152	14683-23-9	U		0.057	0.100	U	GAM
Europium 154	15585-10-1	U		0.066	0.100	U	GAM
Europium 155	14391-16-3	U		0.062	0.100	U	GAM
Thorium 228	14274-82-9	0.470	0.030	0.028			GAM
Thorium 232	TH-232	0.498	0.091	0.089			GAM
Uranium 235	15117-96-1	U		0.097		U	GAM
Uranium 238	U-238	U		2.76		U	GAM
Americium 241	14596-10-2	U		0.135		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

7727-011 J17R36

DATA SHEET

SDG	7727	Client/Case no	Hanford SDG K1395
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R810136-11	Client sample id	J17R36
Dept sample id	7727-011	Location/Matrix	618-7 BurialGrnd V.sampl SOLID
Received	10/17/08	Collected/Weight	10/15/08 09:15 820 g
% solids	98.2	Custody/SAF No	RC-113-010 RC-113

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Thorium 228	14274-82-9	0.513	0.30	0.351	1.00		TH
Thorium 230	14269-63-7	0.366	0.29	0.280	1.00		TH
Thorium 232	TH-232	0.622	0.30	0.280	1.00		TH
Uranium 233/234	U-233/234	2.29	0.46	0.149	1.00		U
Uranium 235	15117-96-1	0.188	0.14	0.180	1.00		U
Uranium 238	U-238	2.89	0.51	0.149	1.00		U
Potassium 40	13966-00-2	8.87	0.86	0.281			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.026	0.100	U	GAM
Radium 226	13982-63-3	0.306	0.048	0.044	0.100		GAM
Radium 228	15262-20-1	0.456	0.12	0.112	0.200		GAM
Europium 152	14683-23-9	U		0.065	0.100	U	GAM
Europium 154	15585-10-1	U		0.085	0.100	U	GAM
Europium 155	14391-16-3	U		0.068	0.100	U	GAM
Thorium 228	14274-82-9	0.412	0.034	0.030			GAM
Thorium 232	TH-232	0.456	0.12	0.112			GAM
Uranium 235	15117-96-1	U		0.104		U	GAM
Uranium 238	U-238	U		3.43		U	GAM
Americium 241	14596-10-2	U		0.092		U	GAM

618-7 Burial Ground Verif.Sampling

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

Test TH Matrix SOLID
SDG 7727
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1395

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
Preparation batch 6174-048					
R810136-01			7727-001	J17J31	0.559
R810136-02			7727-002	J17J32	0.528
R810136-03			7727-003	J17R51	0.500
R810136-04			7727-004	J17R29	0.321
R810136-05			7727-005	J17R30	0.498
R810136-06			7727-006	J17R31	0.413
R810136-07			7727-007	J17R32	0.555
R810136-08			7727-008	J17R33	0.449
R810136-09			7727-009	J17R34	0.498
R810136-10			7727-010	J17R35	0.443
R810136-11			7727-011	J17R36	0.366
R810136-12			7727-012	Lab Control Sample	ok
R810136-13			7727-013	Method Blank	U
R810136-14			7727-014	Duplicate (R810136-08)	ok

Nominal values and limits from method 618-7 Burial Ground Verif.Sampling — RDLs (pCi/g) 1.00

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

Test TH Matrix SOLID
SDG 7727
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1395

METHOD PERFORMANCE

LAB SAMPLE 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
Preparation batch 6174-048			2σ prep error 8.0 %		Reference Lab Notebook #6174, pg. 48											
R810136-01			J17J31	0.357	0.250			103		152			8	10/23/08	10/23	SS-031
R810136-02			J17J32	0.449	0.250			115		84			8	10/23/08	10/23	SS-032
R810136-03			J17R51	0.362	0.250			107		153			8	10/23/08	10/23	SS-033
R810136-04			J17R29	0.385	0.250			96		153			8	10/23/08	10/23	SS-034
R810136-05			J17R30	0.448	0.250			103		154			8	10/23/08	10/23	SS-035
R810136-06			J17R31	0.363	0.250			100		155			8	10/23/08	10/23	SS-037
R810136-07			J17R32	0.472	0.250			95		155			8	10/23/08	10/23	SS-038
R810136-08			J17R33	0.431	0.250			99		155			8	10/23/08	10/23	SS-027
R810136-09			J17R34	0.393	0.250			98		155			8	10/23/08	10/23	SS-028
R810136-10			J17R35	0.327	0.250			105		154			8	10/23/08	10/23	SS-040
R810136-11			J17R36	0.351	0.250			97		155			8	10/23/08	10/23	SS-042
R810136-12			Lab Control Sample	0.234	0.250			97		155				10/23/08	10/23	SS-061
R810136-13			Method Blank	0.319	0.250			102		155				10/23/08	10/23	SS-062
R810136-14			Duplicate (R810136-08)	0.342	0.250			99		155			8	10/23/08	10/23	SS-065
Nominal values and limits from method				1.00	0.250			20-105		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 14 SAMPLES				
	MDA	0.374	±	0.126
	YIELD	101	±	11

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

Test U Matrix SOLID
SDG 7727
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1395

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
Preparation batch 6174-048											
R810136-01			7727-001	J17J31	0.827	U	0.588	141	55	12	10
R810136-02			7727-002	J17J32	0.336	U	0.310	108	88	0	20
R810136-03			7727-003	J17R51	9.23	0.448	7.90	117	22	6	3
R810136-04			7727-004	J17R29	0.570	U	0.360	158	105	0	20
R810136-05			7727-005	J17R30	0.418	U	0.682	61	40	0	8
R810136-06			7727-006	J17R31	10.9	0.974	6.42	170	29	15	5
R810136-07			7727-007	J17R32	0.445	U	0.324	137	92	23	32
R810136-08			7727-008	J17R33	1.42	U	1.25	114	40	4	4
R810136-09			7727-009	J17R34	1.11	U	1.23	90	34	4	4
R810136-10			7727-010	J17R35	1.74	U	1.47	118	39	12	11
R810136-11			7727-011	J17R36	2.29	0.188	2.89	79	21	7	5
R810136-12			7727-012	Lab Control Sample	ok	ok	ok				
R810136-13			7727-013	Method Blank	U	U	U				
R810136-14			7727-014	Duplicate (R810136-08)	ok	- U	ok	98	40	13	9
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
618-7 Burial Ground Verif.Sampling								Averages 116		8	

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

Test U Matrix SOLID
SDG 7727
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1395

METHOD PERFORMANCE

LAB SAMPLE 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
Preparation batch 6174-048			2σ prep error 8.0 %		Reference Lab Notebook #6174, pg. 48											
R810136-01			J17J31	0.115	0.500			94		202			7	10/21/08	10/22	SS-036
R810136-02			J17J32	0.240	0.500			82		127			7	10/21/08	10/22	SS-039
R810136-03			J17R51	0.236	0.500			76		127			7	10/21/08	10/22	SS-040
R810136-04			J17R29	0.278	0.500			72		127			7	10/21/08	10/22	SS-042
R810136-05			J17R30	0.204	0.500			84		128			7	10/21/08	10/22	SS-052
R810136-06			J17R31	0.270	0.500			90		128			7	10/21/08	10/22	SS-055
R810136-07			J17R32	0.188	0.500			87		128			7	10/21/08	10/22	SS-056
R810136-08			J17R33	0.173	0.500			93		129			7	10/21/08	10/22	SS-058
R810136-09			J17R34	0.184	0.500			93		128			7	10/21/08	10/22	SS-059
R810136-10			J17R35	0.195	0.500			88		128			7	10/21/08	10/22	SS-060
R810136-11			J17R36	0.180	0.500			92		129			7	10/21/08	10/22	SS-061
R810136-12			Lab Control Sample	0.775	0.500			96		129				10/21/08	10/22	SS-062
R810136-13			Method Blank	0.199	0.500			83		129				10/21/08	10/22	SS-064
R810136-14			Duplicate (R810136-08)	0.200	0.500			86		129			7	10/21/08	10/22	SS-065
Nominal 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 14 SAMPLES
MDA 0.246 ± 0.316
YIELD 87 ± 14

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

Test GAM Matrix SOLID
SDG 7727
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1395

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 6174-048								
R810136-01			7727-001	J17J31	U		U	
R810136-02			7727-002	J17J32	U		0.063	
R810136-03			7727-003	J17R51	U		U	
R810136-04			7727-004	J17R29	U		U	
R810136-05			7727-005	J17R30	U		U	
R810136-06			7727-006	J17R31	U		U	
R810136-07			7727-007	J17R32	U		U	
R810136-08			7727-008	J17R33	U		U	
R810136-09			7727-009	J17R34	U		U	
R810136-10			7727-010	J17R35	U		U	
R810136-11			7727-011	J17R36	U		U	
R810136-12			7727-012	Lab Control Sample	ok		ok	
R810136-13			7727-013	Method Blank	U		U	
R810136-14			7727-014	Duplicate (R810136-08)	-	U	-	U
Nominal values and limits from method 618-7 Burial Ground Verif.Sampling				RDLs (pCi/g)	0.050		0.100	

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/24/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1395

Test GAM Matrix SOLID
SDG 7727
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1395

METHOD PERFORMANCE

LAB SAMPLE 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
Preparation batch 6174-048			2σ prep error 7.0 %	Reference Lab Notebook #6174, pg. 48												
R810136-01			J17J31	4.08	950					100			5	10/18/08	10/20	02,02,00
R810136-02			J17J32	5.45	967					106			5	10/18/08	10/20	MB,06,00
R810136-03			J17R51	4.42	953					106			5	10/18/08	10/20	MB,07,00
R810136-04			J17R29	4.56	722					106			5	10/18/08	10/20	02,01,00
R810136-05			J17R30	4.41	727					142			5	10/18/08	10/20	MB,07,00
R810136-06			J17R31	3.90	987					142			5	10/18/08	10/20	02,04,00
R810136-07			J17R32	6.13	683					142			5	10/18/08	10/20	MB,05,00
R810136-08			J17R33	3.72	734					142			5	10/18/08	10/20	02,01,00
R810136-09			J17R34	5.29	808					142			5	10/18/08	10/20	MB,06,00
R810136-10			J17R35	4.60	731					142			5	10/18/08	10/20	MB,08,00
R810136-11			J17R36	5.55	820					105			5	10/18/08	10/20	02,04,00
R810136-12			Lab Control Sample	0.031	680					105				10/18/08	10/20	MB,05,00
R810136-13			Method Blank	4.11	680					106				10/18/08	10/20	MB,08,00
R810136-14			Duplicate (R810136-08)	5.68	734					149			5	10/18/08	10/20	MB,05,00
Nominal values and limits from method				0.050	680					100			180			

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

AVERAGES ± 2 SD FOR 14 SAMPLES
MDA 4.42 ± 2.93
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1395

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1395

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

SDG 7727
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1395

DATA SHEET

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1395

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
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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.

SDG	7727
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1395

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	10/24/08

SDG 7727
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1395

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

SDG 7727
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1395

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/24/08

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-010	Page 1 of 1
Collector: T. Stephens, P. Pearson	Company Contact: Joan Kessner; Telephone No.: 509-375-4655	Project Coordinator: KESSNER, JH	Price Code: ~~8C~~ 8B; Data Turnaround: ~~15~~ 2-3 Days
Project Designation: 618-7 Burial Ground Verification Sampling	Sampling Location: 618-7 Burial Ground - Verif. Sampling K1395 (7727)	SAF No.: RC-113	
Ice Chest No.: AFS-04-123	Field Logbook No.: EL-1395-13; COA: RG61872600	Method of Shipment: FED EX	JRD 10/15/08 JEB 10-16-08
Shipped To: EBERLINE SERVICES/ LIONVILLE	Offsite Property No.: A090019	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None										
Type of Container	P	P										
No. of Container(s)	1	1										
Volume	250mL	1000mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
J17J31	SOIL	10/15/08	0930		X								A-3
J17J32	SOIL	10/15/08	0945		X								A-4
J17R51	SOIL	10/15/08	0830		X								D-3

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TStephens TStephens	1100 10.15.08	JRDeBuigne JRDeBuigne	1100 10/15/08
JRDeBuigne JRDeBuigne	1145 10/15/08	O.E. Bernhard	1145 10-15-08
J.E. Bernhard	1130 10-16-08	FED EX	
FED EX			10/17/08 10:35

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-013	Page 1 of 1

Collector T. Stephens, P. Pearson	**Company Contact** Joan Kessner **Telephone No.** 509-375-4655 K1395	**Project Coordinator** KESSNER, JH	**Price Code** ~~8C~~ 8B **Data Turnaround** ~~15 Days~~ ~~X~~ 3
Project Designation 618-7 Burial Ground Verification Sampling	**Sampling Location** 618-7 Burial Ground - Verif. Sampling (Focused) (7727)	**SAF No.** RC-113	
Ice Chest No. AFS-04-123	**Field Logbook No.** EL-1395-13 / **COA** RG61872000	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A090019	**Bill of Lading/Air Bill No.** SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time									
J17R29	SOIL	10/15/08	1015		X							FS-2
J17R30	SOIL	10/15/08	0855		X							FS-3
J17R31	SOIL	10/15/08	0840		X							FS-6
J17R32	SOIL	10/15/08	0930		X							FS-9
J17R33	SOIL	10/15/08	0945		X							FS-10

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1100	Received By/Stored In	Date/Time 1100
T Stephens	10-15-08	JRDeBuigne	10/15/08
Relinquished By/Removed From	Date/Time 1145	Received By/Stored In	Date/Time 1145
JRDeBuigne	10/15/08	J.E. Bernhal	10-15-08
Relinquished By/Removed From	Date/Time 1130	Received By/Stored In	Date/Time
J.E. Bernhal WCH	10-16-08	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX			10/17/08 10:35
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-014	Page 1 of 1

Collector T. Stephens, P. Pearson	**Company Contact** Joan Kessner **Telephone No.** 509-375-4655 K1395	**Project Coordinator** KESSNER, JH	**Price Code** ~~8C~~ 8B **Data Turnaround** ~~15~~ 3 Days 10-16-08
Project Designation 618-7 Burial Ground Verification Sampling	**Sampling Location** 618-7 Burial Ground - Verif. Sampling (Focused) (7727)	**SAF No.** RC-113	
Ice Chest No. AFS-04-123	**Field Logbook No.** EL-1395-13 **COA** RG61872000	**Method of Shipment** FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A090019	**Bill of Lading/Air Bill No.** SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	Cool 4C	None	None									
Type of Container	aG	P	P									
No. of Container(s)	1	1	1									
Volume	500mL	500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J17R34	SOIL	10/15/08	1030			X							FS-1
J17R35	SOIL	10/15/08	0905			X							FS-4
J17R36	SOIL	10/15/08	0915			X							FS-5

10/15/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1100	Received By/Stored In	Date/Time 1100
T Stephens	10.15.08	JR DeBrigne	10/15/08
Relinquished By/Removed From	Date/Time 1145	Received By/Stored In	Date/Time 1145
JR DeBrigne	10/15/08	J.E. Bernhard	10-15-08
Relinquished By/Removed From	Date/Time 1130	Received By/Stored In	Date/Time
J.E. Bernhard	10-16-08	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX			10/17/08 10:35
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); PAHs - 8310; PCBs - 8082; TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}
(2) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)
(3) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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

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 10/17/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 10/17/08 10:35 CoC No. RC-113-010, 013, 014

Container I.D. No. AFS-04-123 Requested TAT (Days) ~~3~~ P.O. Received Yes [ ] No [ ]

INSPECTION DUE DAY 10/24

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

2 Custody seals on shipping container dated & signed? AK 10/17/08 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. 11 Sample Matrix S

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

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

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

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

11 Samples are In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]

12 Samples are Preserved [ ] Not preserved [ ] pH _____ Preservative _____

13 Describe any anomalies

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

15 Inspected by MFM Date: 10/17/08 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 JUL 08

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113 K1395

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17R34	009	S	08LE0515	10/15/08	10/19/08	10/20/08
J17R34	009 MS	S	08LE0515	10/15/08	10/19/08	10/20/08
J17R34	009 MSD	S	08LE0515	10/15/08	10/19/08	10/20/08
J17R35	010	S	08LE0515	10/15/08	10/19/08	10/20/08
J17R36	011	S	08LE0515	10/15/08	10/19/08	10/20/08
LAB QC:						
SBLKYX	MB1	S	08LE0515	N/A	10/19/08	10/20/08
SBLKYX	MB1 BS	S	08LE0515	N/A	10/19/08	10/20/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-113 K 1395
LVL #: 0810L092

W.O. #: 60049-001-001-0001-00
Date Received: 10-17-2008

SEMIVOLATILE

Three (3) soil samples were collected on 10-15-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 10-19-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 10-20-2008.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from samples that met LVLs sample acceptance policy.
2. Samples were extracted and analyzed within holding time.
3. Non-target compounds were detected in these samples.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. Five (5) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. They were biased high and had minimal impact on the data.
6. Two (2) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the sample discrepancy report (SDR# 08MS236) has been enclosed.
7. The method blank contained the common laboratory contaminant bis(2-Ethlyhexyl) phthalate at a level less than the CRQL.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. Internal standard area and retention time criteria were met.

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 21 pages.

208 Welsh Pool Road, Lionville, PA 19353 • (610) 280-3000 • Fax (610) 280-3041

LIONVILLE LABORATORY INC.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/24/02
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08m5236

Initiator: Sharon Saylor
Date: 10-22-08
Client: WC-Hanford RC113

Batch: 0810L052
Samples: 85
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Solid
Prep Batch: 0810E055

1. Reason for SDR

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

b. General Discrepancy

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

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

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

low recovery of isophorone 55% (60-120) & 1,2,4-trichlorobenzene 55% (60-120%) in the SS but MS & MSD are ok

2. Known or Probable Causes(s) Sporadic, all other spike recoveries and all surrogates within acceptance criteria.

RC113010

3. Discussion and Proposed Action Other Description: narrate

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

10/22/08

4. Project Manager Instructions...signature/date: 10/22/08

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: 10/23/08 Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

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

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

QA-139-A-0208

000000004

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

MP	-	Missed Peak: manually added peak not found by automatic quan program.
PA	-	Peak Assignment: quan report was changed to reflect correct peak assignment.
RI	-	Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
SP	-	Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
CB	-	Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
PI	-	Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.
Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0810L092 Client: WC-HANFORD RC-113 Work Order: 60049001001 Report Date: 10/22/08 09:32 Page: 1a

	Cust ID:	J17R34	J17R34	J17R34	J17R35	J17R36	SBLKYX
Sample Information	RFW#:	009	009 MS	009 MSD	010	011	08LE0515-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	65 %	66 %	69 %	71 %	74 %	77 %
	2-Fluorobiphenyl	69 %	92 %	107 %	81 %	82 %	80 %
	Terphenyl-d14	73 %	95 %	117 %	91 %	80 %	95 %
	Phenol-d5	62 %	85 %	100 %	69 %	71 %	70 %
	2-Fluorophenol	68 %	87 %	105 %	70 %	74 %	76 %
	2,4,6-Tribromophenol	65 %	88 %	109 %	73 %	58 %	63 %
		fl	fl	fl	fl	fl	fl
Phenol		340 U	81 %	102 %	370 U	340 U	330 U
bis(2-Chloroethyl)ether		340 U	88 %	106 %	370 U	340 U	330 U
2-Chlorophenol		340 U	77 %	98 %	370 U	340 U	330 U
1,3-Dichlorobenzene		340 U	72 %	87 %	370 U	340 U	330 U
1,4-Dichlorobenzene		340 U	70 %	85 %	370 U	340 U	330 U
1,2-Dichlorobenzene		340 U	75 %	89 %	370 U	340 U	330 U
2-Methylphenol		340 U	81 %	104 %	370 U	340 U	330 U
2,2'-oxybis(1-Chloropropane)		340 U	86 %	106 %	370 U	340 U	330 U
3/4 Methylphenol		340 U	79 %	105 %	370 U	340 U	330 U
N-Nitroso-di-n-propylamine		340 U	92 %	116 %	370 U	340 U	330 U
Hexachloroethane		340 U	69 %	83 %	370 U	340 U	330 U
Nitrobenzene		340 U	63 %	72 %	370 U	340 U	330 U
Isophorone		340 U	61 %	70 %	370 U	340 U	330 U
2-Nitrophenol		340 U	63 %	74 %	370 U	340 U	330 U
2,4-Dimethylphenol		340 U	59 %	78 %	370 U	340 U	330 U
bis(2-Chloroethoxy)methane		340 U	74 %	85 %	370 U	340 U	330 U
2,4-Dichlorophenol		340 U	61 %	75 %	370 U	340 U	330 U
1,2,4-Trichlorobenzene		340 U	60 %	67 %	370 U	340 U	330 U
Naphthalene		340 U	60 %	70 %	370 U	340 U	330 U
4-Chloroaniline		340 U	35 %	37 %	370 U	340 U	330 U
Hexachlorobutadiene		340 U	60 %	67 %	370 U	340 U	330 U
4-Chloro-3-methylphenol		340 U	62 %	77 %	370 U	340 U	330 U
2-Methylnaphthalene		340 U	62 %	74 %	370 U	340 U	330 U
Hexachlorocyclopentadiene		340 U	58 %	90 %	370 U	340 U	330 U
2,4,6-Trichlorophenol		340 U	85 %	111 %	370 U	340 U	330 U
2,4,5-Trichlorophenol		850 U	84 %	109 %	930 U	850 U	830 U

*= Outside of EPA CLP QC limits.

000000008

RFW Batch Number: 0810L092 Client: WC-HANFORD RC-113 Work Order: 60049001001 Page: 1b

Cust ID:	J17R34		J17R34		J17R34		J17R35		J17R36		SBLKYX	
RFW#:	009		009 MS		009 MSD		010		011		08LE0515-MB1	
2-Chloronaphthalene	340	U	87	%	109	%	370	U	340	U	330	U
2-Nitroaniline	850	U	89	%	118	%	930	U	850	U	830	U
Dimethylphthalate	340	U	100	%	126	%	370	U	340	U	330	U
Acenaphthylene	340	U	85	%	108	%	370	U	340	U	330	U
2,6-Dinitrotoluene	340	U	89	%	111 *	%	370	U	340	U	330	U
3-Nitroaniline	850	U	76	%	92	%	930	U	850	U	830	U
Acenaphthene	340	U	83	%	106	%	370	U	340	U	330	U
2,4-Dinitrophenol	850	U	78	%	131 *	%	930	U	850	U	830	U
4-Nitrophenol	850	U	86	%	122	%	930	U	850	U	830	U
Dibenzofuran	340	U	88	%	112	%	370	U	340	U	330	U
2,4-Dinitrotoluene	340	U	89	%	119	%	370	U	340	U	330	U
Diethylphthalate	340	U	99	%	127	%	370	U	340	U	330	U
4-Chlorophenyl-phenylether	340	U	97	%	124 *	%	370	U	340	U	330	U
Fluorene	340	U	85	%	113	%	370	U	340	U	330	U
4-Nitroaniline	850	U	78	%	104	%	930	U	850	U	830	U
4,6-Dinitro-2-methylphenol	850	U	89	%	128	%	930	U	850	U	830	U
N-Nitrosodiphenylamine (1)	340	U	87	%	108	%	370	U	340	U	330	U
4-Bromophenyl-phenylether	340	U	87	%	108	%	370	U	340	U	330	U
Hexachlorobenzene	340	U	83	%	101	%	370	U	340	U	330	U
Pentachlorophenol	850	U	101	%	152 *	%	930	U	850	U	830	U
Phenanthrene	340	U	89	%	113	%	370	U	340	U	330	U
Anthracene	340	U	88	%	110	%	370	U	340	U	330	U
Carbazole	340	U	92	%	118	%	370	U	340	U	330	U
Di-n-butylphthalate	18	J	101	%	129	%	23	J	33	J	330	U
Fluoranthene	340	U	100	%	123	%	370	U	340	U	330	U
Pyrene	41	J	88	%	116	%	370	U	340	U	330	U
Butylbenzylphthalate	340	U	109	%	145	%	370	U	340	U	330	U
3,3'-Dichlorobenzidine	340	U	55	%	56	%	370	U	340	U	330	U
Benzo(a)anthracene	340	U	89	%	111	%	370	U	340	U	330	U
Chrysene	59	J	90	%	112	%	24	J	30	J	330	U
bis(2-Ethylhexyl)phthalate	85	JB	154 *	%	145	%	470	B	55	JB	42	J
Di-n-octyl phthalate	340	U	97	%	131	%	370	U	340	U	330	U
Benzo(b)fluoranthene	340	U	85	%	112	%	370	U	340	U	330	U
Benzo(k)fluoranthene	18	J	79	%	101	%	370	U	340	U	330	U
Benzo(a)pyrene	340	U	81	%	102	%	370	U	340	U	330	U
Indeno(1,2,3-cd)pyrene	340	U	81	%	100	%	370	U	340	U	330	U
Dibenz(a,h)anthracene	340	U	82	%	100	%	370	U	340	U	330	U
Benzo(g,h,i)perylene	340	U	85	%	103	%	370	U	340	U	330	U

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

000000009

000000010

Cust ID: SBLKYX BS

Sample Information
RFW#: 08LE0515-MB1
Matrix: SOIL
D.F.: 1.00
Units: ug/Kg

Surrogate Recovery	Nitrobenzene-d5	58	%
	2-Fluorobiphenyl	81	%
	Terphenyl-d14	102	%
	Phenol-d5	77	%
	2-Fluorophenol	75	%
	2,4,6-Tribromophenol	81	%

Phenol	74		%
bis(2-Chloroethyl)ether	81		%
2-Chlorophenol	71		%
1,3-Dichlorobenzene	65		%
1,4-Dichlorobenzene	64		%
1,2-Dichlorobenzene	68		%
2-Methylphenol	71		%
2,2'-oxybis(1-Chloropropane)	80		%
3/4 Methylphenol	79		%
N-Nitroso-di-n-propylamine	90		%
Hexachloroethane	65		%
Nitrobenzene	56		%
Isophorone	58	*	%
2-Nitrophenol	58		%
2,4-Dimethylphenol	59		%
bis(2-Chloroethoxy)methane	69		%
2,4-Dichlorophenol	62		%
1,2,4-Trichlorobenzene	55	*	%
Naphthalene	56		%
4-Chloroaniline	44		%
Hexachlorobutadiene	56		%
4-Chloro-3-methylphenol	64		%
2-Methylnaphthalene	62		%
Hexachlorocyclopentadiene	70		%
2,4,6-Trichlorophenol	77		%
2,4,5-Trichlorophenol	77		%

*= Outside of EPA CLP QC limits.

Cust ID: SBLKYX BS

RFW#: 08LE0515-MB1

2-Chloronaphthalene	79	%
2-Nitroaniline	87	%
Dimethylphthalate	96	%
Acenaphthylene	81	%
2,6-Dinitrotoluene	83	%
3-Nitroaniline	78	%
Acenaphthene	81	%
2,4-Dinitrophenol	38	%
4-Nitrophenol	90	%
Dibenzofuran	84	%
2,4-Dinitrotoluene	86	%
Diethylphthalate	99	%
4-Chlorophenyl-phenylether	95	%
Fluorene	85	%
4-Nitroaniline	78	%
4,6-Dinitro-2-methylphenol	54	%
N-Nitrosodiphenylamine (1)	86	%
4-Bromophenyl-phenylether	90	%
Hexachlorobenzene	88	%
Pentachlorophenol	64	%
Phenanthrene	86	%
Anthracene	86	%
Carbazole	84	%
Di-n-butylphthalate	103	%
Fluoranthene	87	%
Pyrene	93	%
Butylbenzylphthalate	110	%
3,3'-Dichlorobenzidine	76	%
Benzo(a)anthracene	87	%
Chrysene	89	%
bis(2-Ethylhexyl)phthalate	113	%
Di-n-octyl phthalate	104	%
Benzo(b)fluoranthene	85	%
Benzo(k)fluoranthene	82	%
Benzo(a)pyrene	81	%
Indeno(1,2,3-cd)pyrene	84	%
Dibenz(a,h)anthracene	84	%
Benzo(g,h,i)perylene	85	%

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

000000011

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17R34

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

Client: WC-HANFORD RC-113

Matrix: (soil/water) SOIL

Lab Sample ID: 0810L092-009

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D102013

Level: (low/med) LOW

Date Received: 10/17/08

% Moisture: 2 decanted: (Y/N)__

Date Extracted: 10/19/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/20/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.472	2000	JB
2.	PAH	21.525	300	J
3.	UNKNOWN	26.417	300	J
4.	UNKNOWN	29.552	900	J
5.	UNKNOWN	31.098	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17R35

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

Client: WC-HANFORD RC-113

Matrix: (soil/water) SOIL

Lab Sample ID: 0810L092-010

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D102011

Level: (low/med) LOW

Date Received: 10/17/08

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 10/19/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/20/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.482	2000	JB
2.	UNKNOWN	7.194	200	JB
3.	DIMETHYLPHENANTHRENE	21.526	100	J
4.	UNKNOWN	28.534	200	J
5.	UNKNOWN	29.527	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17R36

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

Client: WC-HANFORD RC-113

Matrix: (soil/water) SOIL

Lab Sample ID: 0810L092-011

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D102012

Level: (low/med) LOW

Date Received: 10/17/08

% Moisture: 2 decanted: (Y/N)

Date Extracted: 10/19/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/20/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH:

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.483	3000	JB
2.	UNKNOWN	20.061	200	JB
3.	PAH	21.527	100	J
4.	UNKNOWN	26.261	200	J
5.	UNKNOWN	29.545	400	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKYX

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

Client: WC-HANFORD RC-113

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0515-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D102010

Level: (low/med) LOW

Date Received: 10/19/08

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

Date Extracted: 10/19/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/20/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	2.301	200	JA
2.	UNKNOWN	5.498	6000	J
3.	UNKNOWN	7.193	200	J
4.	ALDOL CONDENSATE	7.500	80	JA
5.	UNKNOWN	20.058	90	J

See SRC

Lionville Laboratory Use Only: 0810L092

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratories, Inc.

000000016

Client: WC HANFORD SAF# RC-113
Est. Final Proj. Sampling Date:
Project#: 60049-001-001-0001-00
Project Contact/Phone#:
Lionville Laboratory Project Manager: O. JOHNSON
QC: SW846 Del: TAT: 3 DAY
Date Rec'd: 10-17-08 Date Due: 10-17-08

Refrigerator #			A							A						
#/Type Container	Liquid															
	Solid		1G							1P						
Volume			500							500						
Preservatives			—							—						
ANALYSES REQUESTED →			ORGANIC							INORG						
			VOA	BNA	Pest/PCB	Herb				TCLP Metal	Hg	CN				
Lionville Laboratory Use Only				8625H	OPCB		8310	OPRO		Met①						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8625H	OPCB	8310	OPRO	Met①
001	J17J31			Soil	10-15-08	0830					X
002	J17J32					0945					X
003	J17R51					0830					X
004	J17R29					1015					X
005	30					0855					X
006	31					0840					X
007	32					0930					X
008	33					0945					X
009	34					1030	X	X	X	X	X
010	35					0905	X	X	X	X	X

Special Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:
1. DRO includes motor oil
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	10/17/08	0945

Relinquished by	Received by	Date	Time

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

Lionville Laboratory Use Only

0810L092

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory Inc.

Client: WC HANFORD SAF#RC-113

Est. Final Proj. Sampling Date: Sept

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: Del: TAT: 3DAY

Date Rec'd: Date Due:

		A						B							
Refrigerator #			3						3						
#/Type Container	Liquid														
	Solid		1G						1P						
Volume			500						500						
Preservatives															
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	BNA	~~Pest~~ PCB	Herb				Metal	CN					
		Lionville Laboratory Use Only													
			0625H	0PC15		08310	0PORO		MetHO						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		0625H	0PC15		08310	0PORO		MetHO						
011	J17R36			Soil	10/5/08	0915		X	X		X	X		X						

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	10/7/08	0915

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

000000017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-010	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code 8C Data Turnaround ~~15~~ Days 3
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling	SAF No. RC-113	4B
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872600	Method of Shipment FED EX	JRD 10/15/08 JEB 10-16-08
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	~~250mL~~ 500mL JRD 10/15/08 See item (1) in Special Instructions.	1000mL See item (2) in Special Instructions.									

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time										
J17J31	SOIL	10/15/08	0930	X									A-3
J17J32	SOIL	10/15/08	0945	X									A-4
J17R51	SOIL	10/15/08	0830	X									D-3

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From J Stephens T Stephens	1100 10.15.08	Received By/Stored In JRDeBrigne JRDeBrigne	1100 10/15/08
Relinquished By/Removed From JRDeBrigne JRDeBrigne	1145 10/15/08	Received By/Stored In J.E. Bernhard	1145 10-15-08
Relinquished By/Removed From J.E. Bernhard WCH	1130 10-16-08	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 10-17-08 0945	Received By/Stored In [illegible]	Date/Time 10-17-08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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

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

WCH-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-013	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B 10/14/08 Data Turnaround ~~15~~ 3 Days 10/14/08
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX JEB 10-16-08	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J17R29	SOIL	10/15/08	1015	X									FS-2
J17R30	SOIL	10/15/08	0855	X									FS-3
J17R31	SOIL	10/15/08	0840	X									FS-6
J17R32	SOIL	10/15/08	0930	X									FS-9
J17R33	SOIL	10/15/08	0945	X									FS-10

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T. Stephens	1100 10-15-08	Received By/Stored In: J.R. DeBrigue	1100 10/15/08
Relinquished By/Removed From: J.R. DeBrigue	1145 10/15/08	Received By/Stored In: J.E. Bernhard	1145 10-15-08
Relinquished By/Removed From: J.E. Bernhard	1130 10-16-08	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	10-17-08 0945	Received By/Stored In:	10-17-08 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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
Vs=Vegetation
X=Other

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

WCH-EE-011

000000019

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-014	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B Data Turnaround ~~15~~ Days 73
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	Cool 4C	None	None									
Type of Container	aG	P	P									
No. of Container(s)	1	1	1									
Volume	500mL	500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J17R34	SOIL	10/15/08	1030	X	X	X							FS-1
J17R35	SOIL	10/15/08	0905	X	X	X							FS-4
J17R36	SOIL	10/15/08	0915	X	X	X							FS-5

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From J Stephens	Date/Time 1100 10-15-08	Received By/Stored In JE DeBuigne	Date/Time 1100 10/15/08
Relinquished By/Removed From JE DeBuigne	Date/Time 1145 10/15/08	Received By/Stored In J.E. Bernhard	Date/Time 1145 10-15-08
Relinquished By/Removed From J.E. Bernhard	Date/Time 1130 10-16-08	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 10-17-08 0945	Received By/Stored In	Date/Time 10/17/08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); PAHs - 8310; PCBs - 8082; TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))
(2) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)
(3) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Thorium; 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

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

WCH-EE-011

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HANFORD

Project/SAF/SOW/Release #: RC-113

Date: 10/17/08

LvLI Batch #: 0810L D92

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7901 1315 0980
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.6 °C		Cooler # AFS-04-122
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17R34	009	S	08LE0517	10/15/08	10/19/08	10/22/08
J17R34	009 MS	S	08LE0517	10/15/08	10/19/08	10/22/08
J17R34	009 MSD	S	08LE0517	10/15/08	10/19/08	10/22/08
J17R35	010	S	08LE0517	10/15/08	10/19/08	10/21/08
J17R36	011	S	08LE0517	10/15/08	10/19/08	10/21/08
LAB QC:						
BLK	MB1	S	08LE0517	N/A	10/19/08	10/21/08
BLK	MB1 BS	S	08LE0517	N/A	10/19/08	10/21/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-113 K1395
LVL #: 0810L092

W.O. #: 60049-001-001-0001-00
Date Received: 10-17-2008

DIESEL RANGE ORGANICS

One (1) soil sample was collected on 10-15-2008.

The sample and its associated QC samples were extracted on 10-19-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 10-21,22-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1. All required holding times for extraction and analysis have been met.
2. Sample J17R34 required instrument dilutions due to high concentrations of non-target analytes.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

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 12 pages.
r:\group\data\2008\dro\wc-hanford\0810-092cs1.doc

LIONVILLE LABORATORY INC.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/30/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 10/30/08 10:12

RFW Batch Number: **0810L092** Client: **WC-HANFORD RC-113 K1395** Work Order: 60049001001 Page: 1

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	Cust ID:	J17R34	J17R34	J17R34	J17R35	J17R36	BLK
Sample Information	RFW#:	009	009 MS	009 MSD	010	011	08LE0517-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	p-Terphenyl	74 %	102 %	81 %	89 %	91 %	95 %
Diesel Range Organics		13700 U	I %	I %	3400 U	3400 U	3330 U
Motor Oil Range Organics		680000	NS	NS	95000	170000	10000 U

	Cust ID:	BLK BS
Sample Information	RFW#:	08LE0517-MB1
	Matrix:	SOIL
	D.F.:	1.00
	Units:	ug/kg
	p-Terphenyl	57 %
Diesel Range Organics		67 %
Motor Oil Range Organics		NS

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/19/08 Extraction Batch No: 08LE0517 Analyst: MF Method: **** SOX 3540

Test: ODRO Cleanup Date: Analyst: Client: WC-HANFORD RC-113

LIMS Report Date: 10/20/08 Solvent: DCM,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0810L092-	WC-HANFORD RC-113										
009	J17R34		30.0	1.0		1.0		1.0	N	~~0.0~~ 97.32	33.33
009 -S	J17R34		30.0	1.0	1.0	1.0		1.0	N	0.0	33.33
009 -T	J17R34		30.0	1.0	1.0	1.0		1.0	N	0.0	33.33
010	J17R35		30.0	1.0		1.0		1.0	N	0.0 97.93	33.33
011	J17R36		30.0	1.0		1.0		1.0	N	0.0 98.04	33.33
08LE0517-MB1	BLK		30.0	1.0		1.0		1.0	N	100.00	33.33
08LE0517-MB1 -S	BLK		30.0	1.0	1.0	1.0		1.0	N	100.00	33.33

Comments:
Surrogate: 1.0 ML ODRO SURR 86971906
Spike: 1.0 ML DIESEL SPIKE 86971905

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	10/20/08 1515	SZ	10/20/08 15:19	CC

000000006

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/19/08 Extraction Batch No: 08LE0517 Analyst: MF Method: ****

Test: ODRO Cleanup Date: Analyst: Client: WC-HANFORD RC-113

LIMS Report Date: 10/23/08 Solvent: DCM,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	C/D FACTOR
0810L092-	WC-HANFORD RC-113										
009	J17R34		30.0	1.0		1.0		1.0	N	97.37	0.034
009 -S	J17R34		30.0	1.0	1.0	1.0		1.0	N	97.37	0.034
009 -T	J17R34		30.0	1.0	1.0	1.0		1.0	N	97.37	0.034
010	J17R35		30.0	1.0		1.0		1.0	N	97.93	0.034
011	J17R36		30.0	1.0		1.0		1.0	N	98.04	0.034
08LE0517-MB1			30.0	1.0		1.0		1.0	N	100.00	0.033
08LE0517-MB1 -S			30.0	1.0	1.0	1.0		1.0	N	100.00	0.033

Comments:
Surrogate: 1.0 ML ODRO SURR 86971906
Spike: 1.0 ML DIESEL SPIKE 86971905

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
			CAC	10/23/08	% Solids added

000000007

Lionville Laboratory Use Only

08101092

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC HANFORD SAF#RC-113

Est. Final Proj. Sampling Date: 5/1/08

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: Del: TAT: 3DAY

Date Rec'd: Date Due:

	A	B
Refrigerator #	3	3
#/Type Container (Liquid / Solid)	1G	1P
Volume	500	500
Preservatives	—	—

ANALYSES REQUESTED →

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA (Lionville Laboratory Use Only: 0625H)	Pest/PCB (OPCB)	Herb		ORGANIC VOA (08310)	BNA (0RRO)		INORG Metal (MetO)	CN					
011	J17R36			Soil	10/15/08	0915		X	X			X	X		X						

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	10/7/08	0915

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-010	Page 1 of 1

Collector T. Stephens, P. Pearson	Company Contact Joan Kessner	Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code 8C	Data Turnaround ~~15~~ Days 7-3
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling		SAF No. RC-113	8B	
Ice Chest No. AFS-04-182	Field Logbook No. EL-1395-13	COA RG61872600	Method of Shipment FED EX	JRD 10/15/08 JEB 10-16-08	
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A090035		Bill of Lading/Air Bill No. SEE OSR		

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None										
Type of Container	P	P										
No. of Container(s)	1	1										
Volume	~~250mL~~ 500mL JRD 10/15/08	1000mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.										
Sample No. / Matrix * / Sample Date / Sample Time												
J17J31 / SOIL / 10/15/08 / 0930	X											A-3
J17J32 / SOIL / 10/15/08 / 0945	X											A-4
J17R51 / SOIL / 10/15/08 / 0830	X											D-3

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1100	Received By/Stored In	Date/Time 1100
J Stephens	10.15.08	JRDeBuigne JRDeBuigne	10/15/08
Relinquished By/Removed From	Date/Time 1145	Received By/Stored In	Date/Time 1145
JRDeBuigne JRDeBuigne	10/15/08	J.E. Bernhard	10-15-08
Relinquished By/Removed From	Date/Time 1130	Received By/Stored In	Date/Time
J.E. Bernhard WCH	10-16-08	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	10-17-08 0945	[illegible]	10-17-08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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
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

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Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-013	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B 10/14/08 Data Turnaround ~~15~~ Days X3 10/14/08 JEB 10-16-08
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

000000010

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J17R29	SOIL	10/15/08	1015	X									FS-2
J17R30	SOIL	10/15/08	0855	X									FS-3
J17R31	SOIL	10/15/08	0840	X									FS-6
J17R32	SOIL	10/15/08	0930	X									FS-9
J17R33	SOIL	10/15/08	0945	X									FS-10

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From T. Stephens	Date/Time 1100 10-15-08	Received By/Stored In JRDeBrigue	Date/Time 1100 10/15/08
Relinquished By/Removed From JRDeBrigue	Date/Time 1145 10/15/08	Received By/Stored In J.E. Bernhard	Date/Time 1145 10-15-08
Relinquished By/~~Removed From~~ J. E. Bernhard	Date/Time 1130 10-16-08	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 10-17-08 0945	Received By/Stored In	Date/Time 10-17-08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-014	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B Data Turnaround ~~15~~ 7 Days
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	Cool 4C	None	None								
Type of Container	aG	P	P								
No. of Container(s)	1	1	1								
Volume	500mL	500mL	1000mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.								

Sample No.	Matrix *	Sample Date	Sample Time										
J17R34	SOIL	10/15/08	1030	X	X	X							FS-1
J17R35	SOIL	10/15/08	0905	X	X	X							FS-4
J17R36	SOIL	10/15/08	0915	X	X	X							FS-5

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From J Stephens	Date/Time 1100 10-15-08	Received By/Stored In JE DeBuigne	Date/Time 1100 10/15/08
Relinquished By/Removed From JE DeBuigne	Date/Time 1145 10/15/08	Received By/Stored In J.E. Bernhard	Date/Time 1145 10-15-08
Relinquished By/Removed From J.E. Bernhard	Date/Time 1130 10-16-08	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 10-17-08 0945	Received By/Stored In [illegible]	Date/Time 101708 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); PAHs - 8310; PCBs - 8082; TPH-Diesel Range - WTPH-D + {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)}
(2) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)
(3) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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
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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

000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HANFORD

Project/SAF/SOW/Release #: RC-113

Date: 10/17/08

LvLI Batch #: 0810L D92

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7901 1315 0980
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.6	°C	Cooler # AFS-04-122
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.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113 K1395

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17J31						
SILVER, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
SILVER, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
SILVER, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/22/08
ALUMINUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/22/08
ALUMINUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
ARSENIC, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
ARSENIC, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/22/08
BERYLLIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/22/08
BERYLLIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
CADMIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
CADMIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/22/08
IRON, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/22/08
IRON, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	001	S	08C0186	10/15/08	10/17/08	10/20/08
MERCURY, TOTAL	001 REP	S	08C0186	10/15/08	10/17/08	10/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	001 MS	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/22/08
POTASSIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/22/08
POTASSIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
MANGANESE, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
MANGANESE, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/22/08
SODIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/22/08
SODIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
NICKEL, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
NICKEL, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	001	S	08L0382	10/15/08	10/20/08	10/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM, TOTAL	001 REP	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	001 MS	S	08L0382	10/15/08	10/20/08	10/21/08
J17J32						
SILVER, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	002	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	002	S	08L0382	10/15/08	10/20/08	10/21/08
J17R51						
SILVER, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/22/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CALCIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	003	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	003	S	08L0382	10/15/08	10/20/08	10/21/08
J17R29						
SILVER, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	004	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	004	S	08L0382	10/15/08	10/20/08	10/21/08
J17R30						
SILVER, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	005	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	005	S	08L0382	10/15/08	10/20/08	10/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
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DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17R31						
SILVER, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	006	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	006	S	08L0382	10/15/08	10/20/08	10/21/08
J17R32						
SILVER, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
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DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COBALT, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	007	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	007	S	08L0382	10/15/08	10/20/08	10/21/08
J17R33						
SILVER, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	008	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	008	S	08L0382	10/15/08	10/20/08	10/21/08
J17R34						
SILVER, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	009	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	009	S	08L0382	10/15/08	10/20/08	10/21/08
J17R35						
SILVER, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08

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CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/22/08
MERCURY, TOTAL	010	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	010	S	08L0382	10/15/08	10/20/08	10/21/08
J17R36						
SILVER, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
ALUMINUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/22/08
ARSENIC, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
BARIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
BERYLLIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/22/08
CALCIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/22/08
CADMIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
COBALT, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
CHROMIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
COPPER, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
IRON, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/22/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	011	S	08C0186	10/15/08	10/17/08	10/20/08
POTASSIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/22/08
MAGNESIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/22/08
MANGANESE, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
SODIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/22/08
NICKEL, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
LEAD, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
ANTIMONY, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
SELENIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
TIN, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
THALLIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
VANADIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
ZINC, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08
ZIRCONIUM, TOTAL	011	S	08L0382	10/15/08	10/20/08	10/21/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
SILVER, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
ALUMINUM LABORTORY	LC1 BS	S	08L0382	N/A	10/20/08	10/22/08
ALUMINUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/22/08
ARSENIC LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
ARSENIC, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
BARIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
BARIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/22/08
BERYLLIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/22/08
CALCIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/22/08
CALCIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/22/08
CADMIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
CADMIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
COBALT LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
COBALT, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
CHROMIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
CHROMIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
COPPER LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
COPPER, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
IRON LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/22/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/22/08
MERCURY LABORATORY	LC1 BS	S	08C0186	N/A	10/17/08	10/20/08
MERCURY, TOTAL	MB1	S	08C0186	N/A	10/17/08	10/20/08
POTASSIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/22/08
POTASSIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/22/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/22/08
MAGNESIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/22/08
MANGANESE LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
MANGANESE, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
SODIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/22/08
SODIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/22/08
NICKEL LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
NICKEL, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
LEAD LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
LEAD, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
ANTIMONY LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
ANTIMONY, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
SELENIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
SELENIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
TIN LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
TIN, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
THALLIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
THALLIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
VANADIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
VANADIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
ZINC LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
ZINC, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0382	N/A	10/20/08	10/21/08
ZIRCONIUM, TOTAL	MB1	S	08L0382	N/A	10/20/08	10/21/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-113
LVL#: 0810L092
SDG/SAF#: K /RC-113

W.O.#: 60049-001-001-0001-00
Date Received: 10-17-08

METALS CASE NARRATIVE

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

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 11 soil samples.

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

   The samples were initially run with a 2-fold dilution for ICP metals due to sample matrix.

   The samples were rerun on a different instrument with a 3-fold dilution for Aluminum, Beryllium, Calcium, Iron, Potassium, Magnesium, and Sodium due to sample matrix.

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 the ending CCV for various analytes in file TA1021A and Sodium in file TA1021B. The samples were rerun and reported from file PS1022A for Sodium along with Aluminum, Beryllium, Calcium, Iron, Potassium, and Magnesium.

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

6. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 39 pages.

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

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

9. The matrix spike (MS) recoveries for 4 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 PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J178R0	Antimony	400	105.3
	Calcium	66,000	91.9
	Aluminum	66,000	101.0
	Zinc	400	104.9

11. The duplicate analyses for 3 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. LvL is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

10/24/02
Date

alm/m10-092

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 08101092

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 [6]	__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:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17J31	Silver, Total	0.14 u	MG/KG	0.14	2.0
		Aluminum, Total	5040	MG/KG	8.3	3.0
		Arsenic, Total	1.9	MG/KG	0.69	2.0
		Barium, Total	62.7	MG/KG	0.14	2.0
		Beryllium, Total	0.29	MG/KG	0.10	3.0
		Calcium, Total	5470	MG/KG	8.3	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	8.5	MG/KG	0.28	2.0
		Chromium, Total	6.8	MG/KG	0.28	2.0
		Copper, Total	13.2	MG/KG	0.28	2.0
		Iron, Total	26200	MG/KG	9.3	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	724	MG/KG	102	3.0
		Magnesium, Total	4320	MG/KG	7.7	3.0
		Manganese, Total	311	MG/KG	0.06	2.0
		Sodium, Total	231	MG/KG	4.2	3.0
		Nickel, Total	9.9	MG/KG	0.28	2.0
		Lead, Total	2.7	MG/KG	0.42	2.0
		Antimony, Total	0.50	MG/KG	0.42	2.0
		Selenium, Total	0.83 u	MG/KG	0.83	2.0
		Tin, Total	0.83 u	MG/KG	0.83	2.0
		Thallium, Total	1.0	MG/KG	0.83	2.0
		Vanadium, Total	71.7	MG/KG	0.19	2.0
		Zinc, Total	55.2	MG/KG	0.83	2.0
		Zirconium, Total	24.6	MG/KG	0.69	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J17J32	Silver, Total	0.14 u	MG/KG	0.14	2.0
		Aluminum, Total	6980	MG/KG	8.6	3.0
		Arsenic, Total	2.5	MG/KG	0.72	2.0
		Barium, Total	75.2	MG/KG	0.14	2.0
		Beryllium, Total	0.35	MG/KG	0.11	3.0
		Calcium, Total	6760	MG/KG	8.6	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	8.3	MG/KG	0.29	2.0
		Chromium, Total	9.0	MG/KG	0.29	2.0
		Copper, Total	13.7	MG/KG	0.29	2.0
		Iron, Total	25000	MG/KG	9.7	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1260	MG/KG	106	3.0
		Magnesium, Total	4600	MG/KG	7.9	3.0
		Manganese, Total	353	MG/KG	0.06	2.0
		Sodium, Total	204	MG/KG	4.3	3.0
		Nickel, Total	11.0	MG/KG	0.29	2.0
		Lead, Total	3.7	MG/KG	0.43	2.0
		Antimony, Total	0.43 u	MG/KG	0.43	2.0
		Selenium, Total	0.86 u	MG/KG	0.86	2.0
		Tin, Total	0.86 u	MG/KG	0.86	2.0
		Thallium, Total	0.87	MG/KG	0.86	2.0
		Vanadium, Total	61.6	MG/KG	0.20	2.0
		Zinc, Total	46.2	MG/KG	0.86	2.0
		Zirconium, Total	24.6	MG/KG	0.72	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J17R51	Silver, Total	0.14 u	MG/KG	0.14	2.0
		Aluminum, Total	4450	MG/KG	8.2	3.0
		Arsenic, Total	1.8	MG/KG	0.69	2.0
		Barium, Total	59.9	MG/KG	0.14	2.0
		Beryllium, Total	0.27	MG/KG	0.10	3.0
		Calcium, Total	6590	MG/KG	8.2	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	8.5	MG/KG	0.27	2.0
		Chromium, Total	5.7	MG/KG	0.27	2.0
		Copper, Total	12.2	MG/KG	0.27	2.0
		Iron, Total	24700	MG/KG	9.3	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	590	MG/KG	101	3.0
		Magnesium, Total	4240	MG/KG	7.6	3.0
		Manganese, Total	303	MG/KG	0.05	2.0
		Sodium, Total	481	MG/KG	4.1	3.0
		Nickel, Total	10.0	MG/KG	0.27	2.0
		Lead, Total	1.7	MG/KG	0.41	2.0
		Antimony, Total	0.60	MG/KG	0.41	2.0
		Selenium, Total	0.82 u	MG/KG	0.82	2.0
		Tin, Total	0.94	MG/KG	0.82	2.0
		Thallium, Total	0.82 u	MG/KG	0.82	2.0
		Vanadium, Total	71.3	MG/KG	0.19	2.0
		Zinc, Total	44.8	MG/KG	0.82	2.0
		Zirconium, Total	24.3	MG/KG	0.69	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17R29	Silver, Total	0.14 u	MG/KG	0.14	2.0
		Aluminum, Total	6790	MG/KG	8.3	3.0
		Arsenic, Total	2.0	MG/KG	0.69	2.0
		Barium, Total	69.5	MG/KG	0.14	2.0
		Beryllium, Total	0.37	MG/KG	0.10	3.0
		Calcium, Total	11500	MG/KG	8.3	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	8.9	MG/KG	0.28	2.0
		Chromium, Total	12.2	MG/KG	0.28	2.0
		Copper, Total	13.1	MG/KG	0.28	2.0
		Iron, Total	26900	MG/KG	9.3	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1120	MG/KG	102	3.0
		Magnesium, Total	5140	MG/KG	7.6	3.0
		Manganese, Total	345	MG/KG	0.06	2.0
		Sodium, Total	301	MG/KG	4.1	3.0
		Nickel, Total	14.3	MG/KG	0.28	2.0
		Lead, Total	2.1	MG/KG	0.41	2.0
		Antimony, Total	0.75	MG/KG	0.41	2.0
		Selenium, Total	0.83 u	MG/KG	0.83	2.0
		Tin, Total	0.83 u	MG/KG	0.83	2.0
		Thallium, Total	0.83 u	MG/KG	0.83	2.0
		Vanadium, Total	80.0	MG/KG	0.19	2.0
		Zinc, Total	47.1	MG/KG	0.83	2.0
		Zirconium, Total	23.0	MG/KG	0.69	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J17R30	Silver, Total	0.14 u	MG/KG	0.14	2.0
		Aluminum, Total	5270	MG/KG	8.3	3.0
		Arsenic, Total	2.3	MG/KG	0.69	2.0
		Barium, Total	57.8	MG/KG	0.14	2.0
		Beryllium, Total	0.37	MG/KG	0.10	3.0
		Calcium, Total	5750	MG/KG	8.3	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	8.7	MG/KG	0.28	2.0
		Chromium, Total	6.5	MG/KG	0.28	2.0
		Copper, Total	14.4	MG/KG	0.28	2.0
		Iron, Total	24200	MG/KG	9.3	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	510	MG/KG	102	3.0
		Magnesium, Total	4180	MG/KG	7.7	3.0
		Manganese, Total	297	MG/KG	0.06	2.0
		Sodium, Total	208	MG/KG	4.2	3.0
		Nickel, Total	9.9	MG/KG	0.28	2.0
		Lead, Total	2.0	MG/KG	0.42	2.0
		Antimony, Total	0.42 u	MG/KG	0.42	2.0
		Selenium, Total	0.83 u	MG/KG	0.83	2.0
		Tin, Total	0.83 u	MG/KG	0.83	2.0
		Thallium, Total	0.83 u	MG/KG	0.83	2.0
		Vanadium, Total	68.1	MG/KG	0.19	2.0
		Zinc, Total	43.6	MG/KG	0.83	2.0
		Zirconium, Total	27.6	MG/KG	0.69	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J17R31	Silver, Total	0.13 u	MG/KG	0.13	2.0
		Aluminum, Total	4250	MG/KG	7.9	3.0
		Arsenic, Total	1.6	MG/KG	0.66	2.0
		Barium, Total	62.2	MG/KG	0.13	2.0
		Beryllium, Total	0.36	MG/KG	0.1	3.0
		Calcium, Total	5190	MG/KG	7.9	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	9.4	MG/KG	0.26	2.0
		Chromium, Total	65.9	MG/KG	0.26	2.0
		Copper, Total	15.8	MG/KG	0.26	2.0
		Iron, Total	27500	MG/KG	8.9	3.0
		Mercury, Total	0.008u	MG/KG	0.008	1.0
		Potassium, Total	527	MG/KG	96.9	3.0
		Magnesium, Total	4230	MG/KG	7.3	3.0
		Manganese, Total	307	MG/KG	0.05	2.0
		Sodium, Total	257	MG/KG	3.9	3.0
		Nickel, Total	17.2	MG/KG	0.26	2.0
		Lead, Total	1.8	MG/KG	0.39	2.0
		Antimony, Total	0.91	MG/KG	0.39	2.0
		Selenium, Total	0.79 u	MG/KG	0.79	2.0
		Tin, Total	0.79	MG/KG	0.79	2.0
		Thallium, Total	1.1	MG/KG	0.79	2.0
		Vanadium, Total	80.5	MG/KG	0.18	2.0
		Zinc, Total	49.4	MG/KG	0.79	2.0
		Zirconium, Total	24.8	MG/KG	0.66	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J17R32	Silver, Total	0.13 u	MG/KG	0.13	2.0
		Aluminum, Total	3500	MG/KG	8.0	3.0
		Arsenic, Total	0.98	MG/KG	0.67	2.0
		Barium, Total	42.9	MG/KG	0.13	2.0
		Beryllium, Total	0.18	MG/KG	0.10	3.0
		Calcium, Total	4510	MG/KG	8.0	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	9.3	MG/KG	0.27	2.0
		Chromium, Total	4.7	MG/KG	0.27	2.0
		Copper, Total	12.0	MG/KG	0.27	2.0
		Iron, Total	25100	MG/KG	9.0	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	426	MG/KG	99.0	3.0
		Magnesium, Total	4120	MG/KG	7.4	3.0
		Manganese, Total	290	MG/KG	0.05	2.0
		Sodium, Total	198	MG/KG	4.0	3.0
		Nickel, Total	8.2	MG/KG	0.27	2.0
		Lead, Total	1.3	MG/KG	0.40	2.0
		Antimony, Total	0.68	MG/KG	0.40	2.0
		Selenium, Total	0.80 u	MG/KG	0.80	2.0
		Tin, Total	1.0	MG/KG	0.80	2.0
		Thallium, Total	1.2	MG/KG	0.80	2.0
		Vanadium, Total	77.5	MG/KG	0.19	2.0
		Zinc, Total	45.2	MG/KG	0.80	2.0
		Zirconium, Total	23.2	MG/KG	0.67	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J17R33	Silver, Total	0.12 u	MG/KG	0.12	2.0
		Aluminum, Total	3730	MG/KG	7.0	3.0
		Arsenic, Total	1.2	MG/KG	0.59	2.0
		Barium, Total	57.2	MG/KG	0.12	2.0
		Beryllium, Total	0.29	MG/KG	0.09	3.0
		Calcium, Total	4980	MG/KG	7.0	3.0
		Cadmium, Total	0.06 u	MG/KG	0.06	2.0
		Cobalt, Total	9.1	MG/KG	0.23	2.0
		Chromium, Total	3.4	MG/KG	0.23	2.0
		Copper, Total	25.0	MG/KG	0.23	2.0
		Iron, Total	24400	MG/KG	7.9	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	543	MG/KG	86.6	3.0
		Magnesium, Total	3630	MG/KG	6.5	3.0
		Manganese, Total	310	MG/KG	0.05	2.0
		Sodium, Total	308	MG/KG	3.5	3.0
		Nickel, Total	6.8	MG/KG	0.23	2.0
		Lead, Total	6.5	MG/KG	0.35	2.0
		Antimony, Total	0.55	MG/KG	0.35	2.0
		Selenium, Total	0.70 u	MG/KG	0.70	2.0
		Tin, Total	0.70 u	MG/KG	0.70	2.0
		Thallium, Total	0.70 u	MG/KG	0.70	2.0
		Vanadium, Total	61.5	MG/KG	0.16	2.0
		Zinc, Total	52.4	MG/KG	0.70	2.0
		Zirconium, Total	20.8	MG/KG	0.59	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	J17R34	Silver, Total	0.14 u	MG/KG	0.14	2.0
		Aluminum, Total	4510	MG/KG	8.3	3.0
		Arsenic, Total	2.1	MG/KG	0.69	2.0
		Barium, Total	64.4	MG/KG	0.14	2.0
		Beryllium, Total	0.24	MG/KG	0.10	3.0
		Calcium, Total	8850	MG/KG	8.3	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	9.0	MG/KG	0.28	2.0
		Chromium, Total	7.1	MG/KG	0.28	2.0
		Copper, Total	12.4	MG/KG	0.28	2.0
		Iron, Total	24900	MG/KG	9.4	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	646	MG/KG	103	3.0
		Magnesium, Total	4080	MG/KG	7.7	3.0
		Manganese, Total	311	MG/KG	0.06	2.0
		Sodium, Total	258	MG/KG	4.2	3.0
		Nickel, Total	10.3	MG/KG	0.28	2.0
		Lead, Total	5.6	MG/KG	0.42	2.0
		Antimony, Total	0.72	MG/KG	0.42	2.0
		Selenium, Total	0.83 u	MG/KG	0.83	2.0
		Tin, Total	0.83 u	MG/KG	0.83	2.0
		Thallium, Total	0.83 u	MG/KG	0.83	2.0
		Vanadium, Total	74.2	MG/KG	0.19	2.0
		Zinc, Total	45.6	MG/KG	0.83	2.0
		Zirconium, Total	23.7	MG/KG	0.69	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-010	J17R35	Silver, Total	0.13 u	MG/KG	0.13	2.0
		Aluminum, Total	3810	MG/KG	7.9	3.0
		Arsenic, Total	0.86	MG/KG	0.66	2.0
		Barium, Total	50.0	MG/KG	0.13	2.0
		Beryllium, Total	0.22	MG/KG	0.1	3.0
		Calcium, Total	6230	MG/KG	7.9	3.0
		Cadmium, Total	0.07 u	MG/KG	0.07	2.0
		Cobalt, Total	11.0	MG/KG	0.26	2.0
		Chromium, Total	4.5	MG/KG	0.26	2.0
		Copper, Total	14.9	MG/KG	0.26	2.0
		Iron, Total	26700	MG/KG	8.9	3.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	528	MG/KG	97.4	3.0
		Magnesium, Total	4460	MG/KG	7.3	3.0
		Manganese, Total	338	MG/KG	0.05	2.0
		Sodium, Total	278	MG/KG	4.0	3.0
		Nickel, Total	9.2	MG/KG	0.26	2.0
		Lead, Total	1.7	MG/KG	0.40	2.0
		Antimony, Total	0.98	MG/KG	0.40	2.0
		Selenium, Total	0.79 u	MG/KG	0.79	2.0
		Tin, Total	0.79 u	MG/KG	0.79	2.0
		Thallium, Total	0.79 u	MG/KG	0.79	2.0
		Vanadium, Total	75.9	MG/KG	0.18	2.0
		Zinc, Total	48.3	MG/KG	0.79	2.0
		Zirconium, Total	23.1	MG/KG	0.66	2.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	J17R36	Silver, Total	0.14 u	MG/KG	0.14	2.0
		Aluminum, Total	3960	MG/KG	8.1	3.0
		Arsenic, Total	1.5	MG/KG	0.68	2.0
		Barium, Total	60.4	MG/KG	0.14	2.0
		Beryllium, Total	0.26	MG/KG	0.10	3.0
		Calcium, Total	5570	MG/KG	8.1	3.0
		Cadmium, Total	6.2	MG/KG	0.07	2.0
		Cobalt, Total	9.6	MG/KG	0.27	2.0
		Chromium, Total	5.8	MG/KG	0.27	2.0
		Copper, Total	12.5	MG/KG	0.27	2.0
		Iron, Total	26700	MG/KG	9.1	3.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Potassium, Total	622	MG/KG	99.9	3.0
		Magnesium, Total	4200	MG/KG	7.5	3.0
		Manganese, Total	357	MG/KG	0.05	2.0
		Sodium, Total	291	MG/KG	4.1	3.0
		Nickel, Total	12.6	MG/KG	0.27	2.0
		Lead, Total	2.0	MG/KG	0.41	2.0
		Antimony, Total	0.86	MG/KG	0.41	2.0
		Selenium, Total	0.81 u	MG/KG	0.81	2.0
		Tin, Total	0.81 u	MG/KG	0.81	2.0
		Thallium, Total	1.5	MG/KG	0.81	2.0
		Vanadium, Total	80.2	MG/KG	0.19	2.0
		Zinc, Total	50.2	MG/KG	0.81	2.0
		Zirconium, Total	24.8	MG/KG	0.68	2.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0382-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	12.0	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.20	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	25.7	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
		Magnesium, Total	19.9	MG/KG	3.7	1.0
		Manganese, Total	0.11	MG/KG	0.04	1.0
		Sodium, Total	33.9	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Tin, Total	0.62	MG/KG	0.60	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.60 u	MG/KG	0.60	1.0
		Zirconium, Total	0.50 u	MG/KG	0.50	1.0
BLANK1	08C0186-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17J31	Silver, Total	2.6	0.14u	3.4	76.5	2.0
		Aluminum, Total	5590	5040	135	412.1*	3.0
		Arsenic, Total	129	1.9	135	94.2	2.0
		Barium, Total	171	62.7	135	80.6	2.0
		Beryllium, Total	3.2	0.29	3.4	85.6	3.0
		Calcium, Total	7830	5470	1680	140.4	3.0
		Cadmium, Total	2.8	0.07u	3.4	82.4	2.0
		Cobalt, Total	37.1	8.5	33.7	84.9	2.0
		Chromium, Total	17.8	6.8	13.5	81.5	2.0
		Copper, Total	27.2	13.2	16.8	83.3	2.0
		Iron, Total	26300	26200	67.4	114.8*	3.0
		Mercury, Total	0.15	0.00u	0.14	104.9	1.0
		Potassium, Total	2250	724	1680	90.8	3.0
		Magnesium, Total	6000	4320	1680	99.3	3.0
		Manganese, Total	346	311	33.7	102.7*	2.0
		Sodium, Total	1940	231	1680	101.7	3.0
		Nickel, Total	40.0	9.9	33.7	89.3	2.0
		Lead, Total	34.7	2.7	33.7	95.0	2.0
		Antimony, Total	19.4	0.50	33.7	56.1	2.0
		Selenium, Total	123	0.83u	135	91.5	2.0
		Tin, Total	64.0	0.83u	67.4	95.0	2.0
		Thallium, Total	128	1.0	135	94.5	2.0
		Vanadium, Total	100	71.7	33.7	85.2	2.0
		Zinc, Total	77.5	55.2	33.7	66.2	2.0
		Zirconium, Total	324	24.6	337	88.9	2.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17J31	Silver, Total	0.14u	0.13u	NC	2.0
		Aluminum, Total	5040	4760	5.6	3.0
		Arsenic, Total	1.9	1.7	11.1	2.0
		Barium, Total	62.7	55.4	12.4	2.0
		Beryllium, Total	0.29	0.38	26.9	3.0
		Calcium, Total	5470	5320	2.7	3.0
		Cadmium, Total	0.07u	0.07u	NC	2.0
		Cobalt, Total	8.5	9.3	9.0	2.0
		Chromium, Total	6.8	5.9	14.2	2.0
		Copper, Total	13.2	12.3	7.1	2.0
		Iron, Total	26200	25700	2.0	3.0
		Mercury, Total	0.00u	0.00u	NC	1.0
		Potassium, Total	724	702	3.1	3.0
		Magnesium, Total	4320	4250	1.7	3.0
		Manganese, Total	311	313	0.70	2.0
		Sodium, Total	231	241	4.1	3.0
		Nickel, Total	9.9	8.7	12.9	2.0
		Lead, Total	2.7	2.7	0.00	2.0
		Antimony, Total	0.50	0.39u	~~NC~~ 200	2.0
		Selenium, Total	0.83u	0.79u	NC	2.0
		Tin, Total	0.83u	0.79u	NC	2.0
		Thallium, Total	1.0	1.3	26.1	2.0
		Vanadium, Total	71.7	68.5	4.6	2.0
		Zinc, Total	55.2	46.4	17.3	2.0
		Zirconium, Total	24.6	23.2	5.9	2.0

* Corrected RPD
aem 10/23/08

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/23/08

CLIENT: WC-HANFORD RC-113 LVL LOT #: 0810L092

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0382-LC1	Silver, LCS	48.3	50.0	MG/KG	96.6
		Aluminum, LCS	504	500	MG/KG	100.8
		Arsenic, LCS	935	1000	MG/KG	93.5
		Barium, LCS	482	500	MG/KG	96.5
		Beryllium, LCS	23.4	25.0	MG/KG	93.6
		Calcium, LCS	2340	2500	MG/KG	93.4
		Cadmium, LCS	23.7	25.0	MG/KG	94.8
		Cobalt, LCS	238	250	MG/KG	95.3
		Chromium, LCS	49.1	50.0	MG/KG	98.2
		Copper, LCS	121	125	MG/KG	96.6
		Iron, LCS	505	500	MG/KG	100.9
		Potassium, LCS	2340	2500	MG/KG	93.6
		Magnesium, LCS	2360	2500	MG/KG	94.2
		Manganese, LCS	74.5	75.0	MG/KG	99.3
		Sodium, LCS	2410	2500	MG/KG	96.6
		Nickel, LCS	192	200	MG/KG	96.2
		Lead, LCS	240	250	MG/KG	96.0
		Antimony, LCS	286	300	MG/KG	95.3
		Selenium, LCS	927	1000	MG/KG	92.7
		Tin, LCS	471	500	MG/KG	94.1
		Thallium, LCS	953	1000	MG/KG	95.3
		Vanadium, LCS	241	250	MG/KG	96.4
		Zinc, LCS	97.4	100	MG/KG	97.4
		Zirconium, LCS	480	500	MG/KG	96.1
LCS1	08C0186-LC1	Mercury, LCS	5.0	4.7	MG/KG	105.5

Lionville Laboratory Incorporated Logbook #: 518

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0382
Date/Time Initiated: 10/20/08 1400
Date/Time Completed: 10/20/08 2100
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (CP)
Parameters: See packing

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

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
(3050B)
3051
CLP ILMO3.0
ILMO4.0

DW 200.7 (1994)
200.9
3113B
MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)
SM 3030C (NC)
Other

TNW

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
0810L092-001		1.48 gr	100 ml	<2	TO	not fine	brown/tan soil	rocks	
001R		1.50 gr							
001S	1.0 ml *	1.52 gr							
002		1.51 gr				coarse	brown soil	rocks/wg.	
003		1.49 gr				not fine	brown/tan soil	rocks	RAD
004		1.54 gr				coarse	brown soil		
005		1.48 gr				not fine	brown/tan soil		
006		1.55 gr							RAD
007		1.53 gr							
008		1.77 gr				coarse	brown soil		
009		1.48 gr				not fine	black/tan soil		
010		1.55 gr							
011		1.51 gr							
0810L087-001		1.42 gr							RAD
001R		1.47 gr							
001S	1.0 ml *	1.46 gr							
002		1.49 gr							
003		1.53 gr							
004		1.48 gr							
0810L046-001		1.56 gr				fine	brown soil		
001R		1.54 gr							
001S	1.0 ml	1.54 gr							
0810L051-001		1.48 gr							
001R		1.46 gr							

Spiking IDs:
MS #: 8100-04-04
05
06
LCS #: 6072-78-07
08
09
10
11

Reagent IDs:
HNO_3 G17027
HCL G26054
H_2O_2 G15A18
1:1 HNO_3 9789-086-06
1:1 HCL

File ID#: IC038201
IC038202
IC038203
LIMS Transfer: (Y) N Updated
Data Review By/Date: PMP, 10/22/08

Lionville Laboratory Incorporated Logbook #: 518

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0382
Date/Time Initiated:
Date/Time Completed:
Analyst(s): See page 011
Matrix: Soil Water Other:
Instr. Type: AA ICP
Parameters:

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

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

TMW

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
08102051-001S		1.52gr	100mL	<2	TO	fine	brown sand	ROCKS	
08L0382-MB1		1.0gr	↓	↓	↓	coarse	brittly chips		
LCS	1.0mL	1.0gr	↓	↓	↓	↓	↓		

PML 10/20/08

Spiking IDs:
MS #: See page 011
LCS #:

Reagent IDs:
HNO_3
HCL
H_2O_2
1:1 HNO_3
1:1 HCL
See page 011

File ID#: IZ038201, IZ038202, IZ038203
LIMS Transfer: (Y) N Updated
Data Review By/Date: PMP, 10/22/08

ville Laboratory
orporated

MERCURY PREPARATION

Logbook # 498

yst: TEB
10/17/08
Time/Temp: 1440 | 95°
Time/Temp: 1510 | 98°

Instrument ID: HG-2.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0186
Worksheet: HG102009
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 Initial/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	M1			10mL	50mL	
0.2 µg/L	312	0.100				
1.0	2X	0.500				
2.0	3V6	1.000				
5.0	695	2.500				
10.0	569	5.000				
ICV	L16	0.125	2.5			
CCV	K	0.250	5.0			
ICB/CCB	183					5.0
MB1	WO			0.30		PBS186
LC1	48	*	*	0.32		LCS186
0810L092-001	F8			0.36		
001R	PC			0.33		
001S	465	0.500	1.0	0.36		
002	50			0.35		
003	752			0.36		R
004	PF			0.30		
005	C8			0.32		
006	P18			0.36		R
007	C15			0.32		
008	194			0.35		
009	RU			0.33		
010	92			0.32		
011	WN			0.32		

TEB 10/17/08

Standard:	ID	Prep Date/Time
A/MS	R16022-78-14B	10/17/08 0910
B/CCV/LCS	US6022-78-15A	

Reviewed By/Date: [signature] 10/22/08

see book # 938 for std traceability information

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

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

gCVAA-Prep1007

Page #:

000000033

See SRC

Lionville Laboratory Use Only: 0810L092

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: WC HANFORD SAP# RC-113

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: SW846 Del: TAT: 3 DAY

Date Rec'd: 10-17-08 Date Due: 10-17-08

		A						B							
Refrigerator #		3						3							
#/Type Container	Liquid / Solid	1G						1P							
Volume		500						500							
Preservatives		1						1							
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb			INORG: TCLP Metal Hg	CN						
Lionville Laboratory Use Only			0625H	OPCS		08310	OPRO		Met①						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	OPCS	08310	OPRO	Met①
001	J17J31			Soil	10/15/08	0830					X
002	J17J32					0945					X
003	J17R51					0830					X
004	J17R29					1015					X
005	30					0855					X
006	31					0840					X
007	32					0930					X
008	33					0945					X
009	34					1030	X	X	X	X	X
010	35					0905	X	X	X	X	X

Special Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:
1. DRO includes motor oil
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	V. Hunnely	10/17/08	0945

Relinquished by	Received by	Date	Time

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

000000034

Lionville Laboratory Use Only

08101.092

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

Client: WC HANFORD SAF#RC-113

Est. Final Proj. Sampling Date:

Project#: 5W 19A

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: Del: TAT: 3DAY

Date Rec'd: Date Due:

		A						B							
Refrigerator #		3						3							
#/Type Container	Liquid														
	Solid	1G						1P							
Volume		500						500							
Preservatives		—						—							
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	~~Pest~~/PCB	Herb			Metal	CN						
		Lionville Laboratory Use Only													
			0625H	OPCS		08310	OPRO		MetHG						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
011	J17R36			Soil	10/5/08	0915		X	X		X	X		X						

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	10/7/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

000000035

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-010	Page 1 of 1
Collector: T. Stephens, P. Pearson	Company Contact: Joan Kessner; Telephone No.: 509-375-4655	Project Coordinator: KESSNER, JH	Price Code: 8C 8B; Data Turnaround: ~~15~~ 7 Days
Project Designation: 618-7 Burial Ground Verification Sampling	Sampling Location: 618-7 Burial Ground - Verif. Sampling	SAF No.: RC-113	
Ice Chest No.: AFS-04-182	Field Logbook No.: EL-1395-13; COA: RG61872600	Method of Shipment: FED EX	JRD 10/15/08 JEB 10-16-08
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A090035	Bill of Lading/Air Bill No.: SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	~~250mL~~ 500mL JRD 10/15/08	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (1) in Special Instructions. JRD 10/15/08									
Sample No.	Matrix *	Sample Date	Sample Time								
J17J31	SOIL	10/15/08	0930	X							A-3
J17J32	SOIL	10/15/08	0945	X							A-4
J17R51	SOIL	10/15/08	0830	X							D-3

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T Stephens	10.15.08 1100	Received By/Stored In: JRDeBruigne JRDeBruigne	10/15/08 1100
Relinquished By/Removed From: JRDeBruigne JRD	10/15/08 1145	Received By/Stored In: J.E. Bernhard	10-15-08 1145
Relinquished By/Removed From: J.E. Bernhard	10-16-08 1130	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	10/17/08 0945	Received By/Stored In: [illegible]	10-17-08 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Thorium; 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
SB=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

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

WCH-EE-011

000000036

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-013	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B Data Turnaround ~~15~~ 3 Days
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RC61872000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None										
Type of Container	P	P										
No. of Container(s)	1	1										
Volume	500mL	1000mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
J17R29	SOIL	10/15/08	1015	X									FS-2
J17R30	SOIL	10/15/08	0855	X									FS-3
J17R31	SOIL	10/15/08	0840	X									FS-6
J17R32	SOIL	10/15/08	0930	X									FS-9
J17R33	SOIL	10/15/08	0945	X									FS-10

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From T Stephens	1100 10-15-08	Received By/Stored In JR DeBrigue	1100 10/15/08
Relinquished By/Removed From JR DeBrigue	1145 10/15/08	Received By/Stored In J.E. Bernhard	1145 10-15-08
Relinquished By/Removed From J. E. Bernhard	1130 10-16-08	Received By/Stored In FED EX	
Relinquished By/Removed From FED EX	10-17-08 0945	Received By/Stored In [illegible]	10-17-08 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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

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

WCH-EE-011

000000037

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-014	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code 8C 10/14/08 8B Data Turnaround ~~15~~ Days 7 3 JE 10-16-08
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

000000038

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	Cool 4C	None	None
Type of Container	aG	P	P
No. of Container(s)	1	1	1
Volume	500mL	500mL	1000mL

SAMPLE ANALYSIS

	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
J17R34	SOIL	10/15/08	1030	X	X	X							FS-1
J17R35	SOIL	10/15/08	0905	X	X	X							FS-4
J17R36	SOIL	10/15/08	0915	X	X	X							FS-5

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From T Stephens	Date/Time 1100 10-15-08	Received By/Stored In JE DeBuigne	Date/Time 1100 10/15/08
Relinquished By/Removed From JE DeBuigne	Date/Time 1145 10/15/08	Received By/Stored In J.E. Bernhard	Date/Time 1145 10-15-08
Relinquished By/Removed From J.E. Bernhard	Date/Time 1130 10-16-08	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 10-17-08 0945	Received By/Stored In	Date/Time 10-17-08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); PAHs - 8310; PCBs - 8082; TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))
(2) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)
(3) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Thorium; 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
Li=Liquid
V=Vegetation
X=Other

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

WCH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HANFORD

Project/SAP/SOW/Release #: RC-113

Date: 10/17/08

LvLI Batch #: 0810L D92

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7901 1315 0980
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.6	°C	Cooler # AFS-04-122
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI

RECEIVED
OCT 2008

Lionville Laboratory, Inc.
8310 ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17R34	009	S	08LE0516	10/15/08	10/19/08	10/21/08
J17R34	009 MS	S	08LE0516	10/15/08	10/19/08	10/21/08
J17R34	009 MSD	S	08LE0516	10/15/08	10/19/08	10/21/08
J17R35	010	S	08LE0516	10/15/08	10/19/08	10/21/08
J17R36	011	S	08LE0516	10/15/08	10/19/08	10/21/08
LAB QC:						
BLK	MB1	S	08LE0516	N/A	10/19/08	10/21/08
BLK	MB1 BS	S	08LE0516	N/A	10/19/08	10/21/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-113
LVL #: 0810L092
SDG/SAF # K1395/RC-113

W.O. #: 11343-606-001-9999-00
Date Received: 10-17-2008

POLYAROMATIC HYDROCARBONS

Three (3) soil samples were collected on 10-15-2008.

The samples and associated QC samples were extracted on 10-19-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 10-21-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8310.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LVL) certifies that all test results meet the requirements of NELAC except as noted below:

1. The sample shipment met the sample acceptance policy for Lionville Laboratory.
2. The samples were extracted and analyzed within hold time.
3. The method blank was below the reporting limits for all target compounds.
4. One (1) of seven (7) surrogate recoveries was outside acceptance criteria. A copy of the sample discrepancy report (SDR# 08GC137) has been enclosed.
5. All blank spike recoveries were within acceptance criteria.
6. Two (2) of thirty-two (32) matrix spike recoveries were outside acceptance criteria. A copy of the sample discrepancy report (SDR# 08GC137) has been enclosed.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. LVL is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/30/08
Date

r:\group\data\2008\8310\tmu\0810-092oj2.8310.doc

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

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 08GC137

Initiator: CAL
Date: 10/22/08
Client: WC Hanford

Batch: 08102L092
Samples: 009 FMS
Method: SW846/MCAWW/CLP/

Parameter: PAH
Matrix: SOIL
Prep Batch: 08LE05TC

1. Reason for SDR

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

b. General Discrepancy

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

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

c. Problem (Include all relevant specific results; attach data if necessary) 10/23/08

surrogate recovery 1010 in 009
several spike recoveries outside limits in MS
BS good.

2. Known or Probable Causes(s)

Both problems are due interference from Matrix
SD.

3. Discussion and Proposed Action Other Description:

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

N route.

4. Project Manager Instructions...signature/date: 10/30/08

__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: _____ Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

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

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

QA-139-A-0208

000000003

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PAH'S by HPLC / Method 8310

Report Date: 10/22/08 13:07

RFW Batch Number: 0810L092 Client: WC-HANFORD RC-113 Work Order: 60049001001 Page: 1

	Cust ID:	J17R34	J17R34	J17R34	J17R35	J17R36	BLK
Sample Information	RFW#:	009	009 MS	009 MSD	010	011	08LE0516-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	4.00	4.00	4.00	4.00	4.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Triphenylene		137 * %	121 %	120 %	118 %	124 %	89 %
		fl	fl	fl	fl	fl	fl
Naphthalene		137 U	106 %	106 %	136 U	136 U	33.3 U
Acenaphthylene		137 U	126 %	124 %	136 U	136 U	33.3 U
Acenaphthene		150	I %	I %	91 J	49 J	33.3 U
Fluorene		13.7 U	99 %	101 %	13.6 U	13.6 U	3.33 U
Phenathrene		11 J	108 %	108 %	13.6 U	4.3 J	3.33 U
Anthracene		13.7 U	114 %	126 %	13.6 U	13.6 U	3.33 U
Fluoranthrene		48	152 * %	81 %	13.6 U	13.6 U	3.33 U
Indeno (1,2,3-cd) pyrene		13.7 U	144 %	133 %	13.6 U	13.6 U	3.33 U
Pyrene		410	I %	I %	20	55	3.33 U
Benzo (a) anthracene		88	128 %	117 %	18	22	3.33 U
Chrysene		69	141 %	116 %	36	28	3.33 U
Benzo (b) fluoranthrene		52	117 %	126 %	9.0 J	17	3.33 U
Benzo (k) fluoranthrene		11 J	118 %	124 %	13.6 U	13.6 U	3.33 U
Benzo (a) pyrene		66	110 %	98 %	9.5 J	20	3.33 U
Dibenzo (a,h) anthracene		45	93 %	108 %	13.6 U	12 J	3.33 U
Benzo (ghi) perylene		9.0 J	57 * %	63 %	13.6 U	13.6 U	3.33 U

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

000000005

Lionville Laboratory, Inc.

PAH'S by HPLC / Method 8310

Report Date: 10/22/08 13:07

RFW Batch Number: 0810L092 Client: WC-HANFORD RC-113 Work Order: 60049001001 Page: 2

000000006

Cust ID: **BLK BS**

Sample Information

RFW#: **08LE0516-MB1**
Matrix: SOIL
D.F.: 1.00
Units: ug/Kg

Triphenylene	92	%
Naphthalene	89	%
Acenaphthylene	86	%
Acenaphthene	81	%
Fluorene	82	%
Phenathrene	85	%
Anthracene	96	%
Fluoranthrene	83	%
Indeno (1,2,3-cd) pyrene	89	%
Pyrene	78	%
Benzo (a) anthracene	84	%
Chrysene	91	%
Benzo (b) fluoranthrene	88	%
Benzo (k) fluoranthrene	87	%
Benzo (a) pyrene	64	%
Dibenzo (a,h) anthracene	86	%
Benzo (ghi) perylene	77	%

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

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/19/08 Extraction Batch No: 08LE0516 Analyst: MF Method: ****

Test: O831 Cleanup Date: Analyst: Client: WC-HANFORD RC-113

LIMS Report Date: 10/22/08 Solvent: DCM,ACN Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	C/D FACTOR
0810L092-	WC-HANFORD RC-113										
009 0	J17R34		30.0	1.0		5.0		1.0	N	97.37	171.2
009 0S	J17R34		30.0	1.0	1.0	5.0		1.0	N	97.37	171.2
009 0T	J17R34		30.0	1.0	1.0	5.0		1.0	N	97.37	171.2
010 0	J17R35		30.0	1.0		5.0		1.0	N	97.93	170.2
011 0	J17R36		30.0	1.0		5.0		1.0	N	98.04	170.0
08LE0516-MB1 0			30.0	1.0		5.0		1.0	N	100.00	166.7
08LE0516-MB1 0S			30.0	1.0	1.0	5.0		1.0	N	100.00	166.7

Comments:
Surrogate: 500 UL 8310 SURR 86971909
Spike: 1.0 ML 8310 SPIKE 86971907

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
			CAC	10/22/08	% Solids

0000000007

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/19/08 Extraction Batch No: 08LE0516 Analyst: MF Method: **** SOX 3540

Test: O831 Cleanup Date: Analyst: Client: WC-HANFORD RC-113

LIMS Report Date: 10/20/08 Solvent: DCM,ACN Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0810L092-	WC-HANFORD RC-113										
009 0	J17R34		30.0	1.0		5.0		1.0	N	~~0.0~~ 97.37	166.7
009 0S	J17R34		30.0	1.0	1.0	5.0		1.0	N	0.0	166.7
009 0T	J17R34		30.0	1.0	1.0	5.0		1.0	N	0.0	166.7
010 0	J17R35		30.0	1.0		5.0		1.0	N	0.0 97.93	166.7
011 0	J17R36		30.0	1.0		5.0		1.0	N	0.0 98.04	166.7
08LE0516-MB1 0	BLK		30.0	1.0		5.0		1.0	N	100.00	166.7
08LE0516-MB1 0S	BLK		30.0	1.0	1.0	5.0		1.0	N	100.00	166.7

Comments:
Surrogate: 500 UL 8310 SURR 86971909
Spike: 1.0 ML 8310 SPIKE 86971907

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	10/20/08 1515	SZ	10/20/08 15:15	GC

000000000

See SRC

Lionville Laboratory Use Only: 0810L092

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC HANFORD SAF# RC-13

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: SW846 Del: TAT: 3 DAY

Date Rec'd: 10-17-08 Date Due: 10-17-08

Refrigerator #			A							A							
#/Type Container	Liquid		3							3							
	Solid		16							16							
Volume			500							500							
Preservatives			1							1							
ANALYSES REQUESTED →		ORGANIC: VOA	ORGANIC: BNA	ORGANIC: Pest/PCB	ORGANIC: Herb					INORG: RCRA Metal	INORG: Hg	INORG: CN					
Lionville Laboratory Use Only			8625H	OPCB		8310	DRO			Met①							

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J17J31			Soil	10-15-08	0830							X						
002	J17J32					0945							X						
003	J17R51					0830							X						
004	J17R29					1015							X						
005	30					0855							X						
006	31					0840							X						
007	32					0930							X						
008	33					0945							X						
009	34					1030		X	X		X	X	X						
010	35					0905		X	X		X	X	X						

Special Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:
1. DRO includes motor oil
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	V. Kennedy	10/17/08	0945

Relinquished by	Received by	Date	Time

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

000000009

Lionville Laboratory Use Only

08101.092

Custody Transfer Record/Lab Work Request

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: WC HANFORD SAF#RC-113

Est. Final Proj. Sampling Date: 11/8/08

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: Del: TAT: 3 DAY

Date Rec'd: Date Due:

		A	B
Refrigerator #		3	3
#/Type Container	Liquid		
	Solid	1G	1P
Volume		500	500
Preservatives		—	—

ANALYSES REQUESTED →

ORGANIC				INORG.	
VOA	BNA	Pest/PCB	Herb	Metal	CN

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only													
								06254	0PC5		08310	0PRO		MetO						
011	J17R36			Soil	11/5/08	0915		X	X		X	X		X						

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[illegible]	11/7/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

000000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-010	Page 1 of 1
Collector: T. Stephens, P. Pearson	Company Contact: Joan Kessner; Telephone No.: 509-375-4655	Project Coordinator: KESSNER, JH	Price Code: 8C; Data Turnaround: ~~15~~ 3 Days
Project Designation: 618-7 Burial Ground Verification Sampling	Sampling Location: 618-7 Burial Ground - Verif. Sampling	SAF No.: RC-113	8B
Ice Chest No.: AFS-04-182	Field Logbook No.: EL-1395-13; COA: RG61872600	Method of Shipment: FED EX	JRD 10/15/08; JEB 10-16-08
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A090035	Bill of Lading/Air Bill No.: SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

SAMPLE ANALYSIS

Preservation				None	None								
Type of Container				P	P								
No. of Container(s)				1	1								
Volume				~~250mL~~ 500mL JRD 10/15/08	1000mL								
				See item (1) in Special Instructions.	See item (1) in Special Instructions.								
Sample No.	Matrix *	Sample Date	Sample Time										
J17J31	SOIL	10/15/08	0930	X									A-3
J17J32	SOIL	10/15/08	0945	X									A-4
J17R51	SOIL	10/15/08	0830	X									D-3

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T Stephens	10.15.08 1100	Received By/Stored In: JRDeBuigne JRDeBuigne	10/15/08 1100
Relinquished By/Removed From: JRDeBuigne JRDeBuigne	10/15/08 1145	Received By/Stored In: J.E. Bernhard	10-15-08 1145
Relinquished By/Removed From: J.E. Bernhard	10-16-08 1130	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	10/17/08 0945	Received By/Stored In: [illegible]	10-17-08 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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

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

WCH-EE-011

000000011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-013	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B 10/14/08 Data Turnaround ~~15~~ Days 3 10/14/08
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX	JEB 10-16-08
Shipped To EBERLINE SERVICES/LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J17R29	SOIL	10/15/08	1015	X									FS-2
J17R30	SOIL	10/15/08	0855	X									FS-3
J17R31	SOIL	10/15/08	0840	X									FS-6
J17R32	SOIL	10/15/08	0930	X									FS-9
J17R33	SOIL	10/15/08	0945	X									FS-10

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From T Stephens	1100 10-15-08	Received By/Stored In JR DeBrigue	1100 10/15/08
Relinquished By/Removed From JR DeBrigue	1145 10/15/08	Received By/Stored In J. E. Bernhard	1145 10-15-08
Relinquished By/Removed From J. E. Bernhard	1130 10-16-08	Received By/Stored In FED EX	
Relinquished By/Removed From FED EX	10-17-08 0945	Received By/Stored In [illegible]	10-17-08 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Thorium; 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
Ve=Vegetation
X=Other

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

WCH-EE-011

000000012

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-014	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B Data Turnaround ~~15~~ 3 Days
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	Cool 4C	None	None								
Type of Container	aG	P	P								
No. of Container(s)	1	1	1								
Volume	500mL	500mL	1000mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.								

Sample No.	Matrix *	Sample Date	Sample Time										
J17R34	SOIL	10/15/08	1030	X	X	X							FS-1
J17R35	SOIL	10/15/08	0905	X	X	X							FS-4
J17R36	SOIL	10/15/08	0915	X	X	X							FS-5

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From T Stephens	Date/Time 1100 10-15-08	Received By/Stored In JR DeBuigne	Date/Time 1100 10/15/08
Relinquished By/Removed From JR DeBuigne	Date/Time 1145 10/15/08	Received By/Stored In J.E. Bernhard	Date/Time 1145 10-15-08
Relinquished By/Removed From J.E. Bernhard	Date/Time 1130 10-16-08	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 10-17-08 0945	Received By/Stored In	Date/Time 10-17-08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); PAHs - 8310; PCBs - 8082; TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling))
(2) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)
(3) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Thorium; 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
Li=Liquid
V=Vegetation
X=Other

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

WCH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HANFORD

Project/SAF/SOW/Release #: RC-113

Date: 10/17/08

LvLI Batch #: 0810L D92

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7901 1315 0980
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.6	°C	Cooler # AFS-04-122
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI

RECEIVED
NOV 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-113 K1395

DATE RECEIVED: 10/17/08 LVL LOT # :0810L092

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17R34	009	S	08LE0514	10/15/08	10/19/08	10/20/08
J17R34	009 MS	S	08LE0514	10/15/08	10/19/08	10/20/08
J17R34	009 MSD	S	08LE0514	10/15/08	10/19/08	10/20/08
J17R35	010	S	08LE0514	10/15/08	10/19/08	10/20/08
J17R35	010 R1	S	08LE0544	10/15/08	10/29/08	11/04/08
J17R36	011	S	08LE0514	10/15/08	10/19/08	10/20/08

LAB QC:

PBLKWG	MB1	S	08LE0514	N/A	10/19/08	10/20/08
PBLKWG	MB1 BS	S	08LE0514	N/A	10/19/08	10/20/08
PBLKWT	MB1	S	08LE0544	N/A	10/29/08	11/04/08
PBLKWT	MB1 BS	S	08LE0544	N/A	10/29/08	11/04/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-113
LVL #: 0810L092
SDG/SAF # K1395 /RC-113

W.O. #: 60049-001-001-0001-00
Date Received: 10-17-2008

PCB

Three (3) soil samples were collected on 10-15-2008.

The samples and their associated QC samples were extracted on 10-19,29-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 10-20-2008 and 11-04-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvL) certifies that all test results meet the requirements of NELAC except as noted below:

1 Samples were extracted and analyzed within required holding time.

2. The samples and associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A, respectively.

3 The method blanks were below the reporting limits for all target compounds.

4. Two (2) of twenty (20) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC136) has been enclosed.

5. All blank spike recoveries were within acceptance criteria.

6. Two (2) of four (4) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC144) has been enclosed.

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

r:\group\data\2008\pest-pcb\wc-hanford\0810-092cs2 pcb.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage All pages of this report are integral parts of the analytical data Therefore, this report should only be reproduced in its entirety of 16 pages

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

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

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

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

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory

11/6/08
Date

LvLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08-C 144

Initiator: CAC
Date: 11/05/08
Client: WC Hanford

Batch: 08102092
Samples: 009ms/msD
Method: SW846/MCAWW/CLP/

Parameter: OPCB
Matrix: SOIL
Prep Batch: 08LE0514

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Recovery of Aroclor 1260 is low is both ms/msD

BS is good

2. Known or Probable Causes(s)

possible matrix effect

3. Discussion and Proposed Action Other Description:

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

Narrate
JS
11/6/08

4. Project Manager Instructions...signature/date: 11/6/08

__ Concur with Proposed Action
✓ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: 11/6/08 Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

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

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

QA-139-A-0208

000000004

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC136

Initiator: CAC
Date: 10/21/08
Client: WC Hanford

Batch: 0810L092
Samples: 010
Method: SW846/MCAWW/CLP/

Parameter: PCB
Matrix: SOIL
Prep Batch: 08LE0514

1. Reason for SDR

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

b. General Discrepancy

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

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

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

both surrogate recoveries low in 010.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions.. signature/date: 10/29/08

✓ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
__ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: 10/29/08 Other Explanation:

✓ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Reextracted in hold
Reextract in Batch 08LE0545

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

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

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

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 11/05/08 13:39

RFW Batch Number: 0810L092 Client: WC-HANFORD RC-113 K1395 Work Order: 60049001001 Page: 1

000000007

	Cust ID:	J17R34	J17R34	J17R34	J17R35	J17R35	J17R36
Sample Information	RFW#:	009	009 MS	009 MSD	010	010	011
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG REPREP	UG/KG
Surrogate:	Tetrachloro-m-xylene	105 %	89 %	103 %	36 * %	97 %	102 %
	Decachlorobiphenyl	48 %	57 %	49 %	32 * %	84 %	70 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		14 U	58 %	66 %	14 U	14 U	14 U
Aroclor-1221		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1232		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1242		14 U	14 U	14 U	14 U	14 U	14 U
Aroclor-1248		14 U	14 U	14 U	28	57	14 U
Aroclor-1254		14 U	14 U	14 U	7.8 J	15	5.8 J
Aroclor-1260		14 U	48 * %	48 * %	14 U	14 U	14 U

	Cust ID:	PBLKWG	PBLKWG BS	PBLKWT	PBLKWT BS
Sample Information	RFW#:	08LE0514-MB1	08LE0514-MB1	08LE0544-MB1	08LE0544-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	94 %	89 %	80 %	77 %
	Decachlorobiphenyl	84 %	87 %	76 %	79 %
		fl	fl	fl	fl
Aroclor-1016		13 U	92 %	13 U	67 %
Aroclor-1221		13 U	13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U	13 U
Aroclor-1260		13 U	88 %	13 U	83 %

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

Nashville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.. 1

Extract. Date: 10/19/08 Extraction Batch No: 08LE0514 Analyst: MF Method: **** 5021 3540

Test: OPCB Cleanup Date: 10/20/08 Analyst: MF Client: WC-HANFORD RC-074

LIMS Report Date: 10/20/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0810L088-	WC-HANFORD RC-074										
001	J17K86		30.0	1.0		10		1.0	N	0.0	333.3
001 -S	J17K86		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 -T	J17K86		30.0	1.0	1.0	10		1.0	N	0.0	333.3
0810L092-	WC-HANFORD RC-113										
009	J17R34		30.0	1.0		10		1.0	N	~~0.0~~ 97.37	333.3
009 -S	J17R34		30.0	1.0	1.0	10		1.0	N	0.0	333.3
009 -T	J17R34		30.0	1.0	1.0	10		1.0	N	0.0	333.3
010	J17R35		30.0	1.0		10		1.0	N	0.0 97.83	333.3
011	J17R36		30.0	1.0		10		1.0	N	0.0 98.04	333.3
08LE0514-MB1	PBLKWG		30.0	1.0		10		1.0	N	100.00	333.3
08LE0514-MB1 -S	PBLKWG		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916408
Spike: 250 UL AR1660 89916604

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	10/20/08 1515	SZ	10/20/08 15:15	CE

00000000

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/19/08 Extraction Batch No: 08LE0514 Analyst: MF Method: ****

Test: OPCB Cleanup Date: 10/20/08 Analyst: MF Client: WC-HANFORD RC-074

LIMS Report Date: 10/22/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	Vis H2O	C/D FACTOR	Sulfur Clean?
0810L088-	WC-HANFORD RC-074												
001	J17K86		30.0	1.0		10		1.0	N	94.38		353.2	
001 -S	J17K86		30.0	1.0	1.0	10		1.0	N	94.38		353.2	
001 -T	J17K86		30.0	1.0	1.0	10		1.0	N	94.38		353.2	
0810L092-	WC-HANFORD RC-113												
009	J17R34		30.0	1.0		10		1.0	N	97.37		342.3	
009 -S	J17R34		30.0	1.0	1.0	10		1.0	N	97.37		342.3	
009 -T	J17R34		30.0	1.0	1.0	10		1.0	N	97.37		342.3	
010	J17R35		30.0	1.0		10		1.0	N	97.93		340.4	
011	J17R36		30.0	1.0		10		1.0	N	98.04		340.0	
08LE0514-MB1			30.0	1.0		10		1.0	N	100.00		333.3	
08LE0514-MB1 -S			30.0	1.0	1.0	10		1.0	N	100.00		333.3	

Comments:
Surrogate: 250 UL OLM PSURR 89916408
Spike: 250 UL AR1660 89916604

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
			CAC	10/22/08	% Solids

000000009

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 10/29/08 Extraction Batch No: 08LE0544 Analyst. MF Method: ****

Test: OPCB Cleanup Date: 11/03/08 Analyst: MF Client. WC-HANFORD RC-113 K1395

LIMS Report Date: 11/04/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

000000010

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0810L092-	WC-HANFORD RC-113 K1395										
010	R1 J17R35		30.0	1.0		10		1.0	N	97.93	340.4
0810L131-	BECHTEL-BETTIS REL 65										
001	08-1004		30.0	1.0		10		1.0	N	0.0	333.3
002	08-1003		30.0	1.0		10		1.0	N	0.0	333.3
003	08-1006		30.0	1.0		10		1.0	N	0.0	333.3
004	08-1005		30.0	1.0		10		1.0	N	0.0	333.3
005	08-1002		30.0	1.0		10		1.0	N	0.0	333.3
006	08-1001		30.0	1.0		10		1.0	N	0.00	333.3
009	08-0973		30.0	1.0		10		1.0	N	0.0	333.3
010	08-0972		30.0	1.0		10		1.0	N	0.0	333.3
0810L139-	WC-HANFORD RC-030										
001	J17HK8		30.0	1.0		10		1.0	N	0.0	333.3
001 -S	J17HK8		30.0	1.0	1.0	10		1.0	N	0.0	333.3
001 -T	J17HK8		30.0	1.0	1.0	10		1.0	N	0.0	333.3
08LE0544-MB1	PBLKWT		30.0	1.0		10		1.0	N	100.00	333.3
08LE0544-MB1 -S	PBLKWT		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89917101
Spike: 250 UL AR1660 89916604

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	11/4/8 1534	S2	11/4/08 1525	OC

Lionville Laboratory Use Only

0810L092

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: WC HANFORD SAP# RC-113

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: SW846 Del: TAT: 3 DAY

Date Rec'd: 10-17-08 Date Due: 10-17-08

Refrigerator #			A						B								
#/Type Container	Liquid		3						3								
	Solid		1G						1P								
Volume			500						500								
Preservatives			—						—								
ANALYSES REQUESTED →			ORGANIC						INORG								
			VOA	BNA	~~Pest/PCB~~	Herb			Metal	CN							
			Lionville Laboratory Use Only														
				8625H	OPCB		8310	DRO		Met①							

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	T17T31			Soil	10-15-08	0830							X						
002	T17T32					0945							X						
003	T17R51					0830							X						
004	T17R29					1015							X						
005	30					0855							X						
006	31					0840							X						
007	32					0930							X						
008	33					0945							X						
009	34					1030		X	X		X	X	X						
010	35					0905		X	X		X	X	X						

Special Instructions: Run matrix QC

Met①: HSL + Sn, Zr

Special Instructions:

1. DRO includes motor oil
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	V. Kennedy	10/17/08	0945

Relinquished by	Received by	Date	Time

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

000000011

Lionville Laboratory Use Only

08101092

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000012

Client: WC HANFORD SAF&RC-113

Est. Final Proj. Sampling Date: 8/1

Project#: Sw

Project Contact/Phone#: O. JOHNSON

Lionville Laboratory Project Manager:

QC: Del: TAT: 3DAY

Date Rec'd: Date Due:

		A	B
Refrigerator #		3	3
#/Type Container	Liquid		
	Solid	1G	1P
Volume		500	500
Preservatives		—	—
ANALYSES REQUESTED →		ORGANIC	INORG
		VOA	BNA / Pest/PCB / Herb	Metal / CN

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only													
								0625H	0825		08310	0080		Metal						
011	J17R36			Soil	11/5/08	0915		X	X		X	X		X						

Special Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/7/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-010	Page 1 of 1

Collector T. Stephens, P. Pearson	Company Contact Joan Kessner	Telephone No. 509-375-4655	Project Coordinator KESSNER, JH
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling		SAF No. RC-113
Ice Chest No. AFS-04-182	Field Logbook No. EL-1395-13	COA RG61872600	Method of Shipment FED EX
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A090035		Bill of Lading/Air Bill No. SEE OSR

Price Code 8C 8B

Data Turnaround 15 Days T3

JRD 10/15/08 JEB 10-16-08

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	~~250mL~~ 500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J17J31	SOIL	10/15/08	0930	X									A-3
J17J32	SOIL	10/15/08	0945	X									A-4
J17R51	SOIL	10/15/08	0830	X									D-3

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From T Stephens	1100 10.15.08	Received By/Stored In JRDeBrigne	1100 10/15/08
Relinquished By/Removed From JRDeBrigne	1145 10/15/08	Received By/Stored In J.E. Bernhard	1145 10-15-08
Relinquished By/Removed From J.E. Bernhard	1130 10-16-08	Received By/Stored In FED EX	
Relinquished By/Removed From Fed Ex	10-17-08 0945	Received By/Stored In [illegible]	10-17-08 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Thorium; 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 *

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

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

WCH-EE-011

000000013

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-013	Page 1 of 1
Collector: T. Stephens, P. Pearson	Company Contact: Joan Kessner; Telephone No.: 509-375-4655	Project Coordinator: KESSNER, JH	Price Code: ~~8C~~ 8B; Data Turnaround: ~~15~~ 3 Days
Project Designation: 618-7 Burial Ground Verification Sampling	Sampling Location: 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No.: RC-113	
Ice Chest No.: AFS-04-122	Field Logbook No.: EL-1395-13; COA: RG61872000	Method of Shipment: FED EX	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A090035	Bill of Lading/Air Bill No.: SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	None	None									
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	500mL	1000mL									
SAMPLE ANALYSIS	See item (1) in Special instructions.	See item (2) in Special instructions.									

Sample No.	Matrix *	Sample Date	Sample Time										
J17R29	SOIL	10/15/08	1015	X									FS-2
J17R30	SOIL	10/15/08	0855	X									FS-3
J17R31	SOIL	10/15/08	0840	X									FS-6
J17R32	SOIL	10/15/08	0930	X									FS-9
J17R33	SOIL	10/15/08	0945	X									FS-10

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: T. Stephens	1100 10-15-08	Received By/Stored In: J.R. DeBrigna	1100 10/15/08
Relinquished By/Removed From: J.R. DeBrigna	1145 10/15/08	Received By/Stored In: J. E. Bernhard	1145 10-15-08
Relinquished By/Removed From: J. E. Bernhard	1130 10-16-08	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	10-17-08 0945	Received By/Stored In: [illegible]	10-17-08 0945
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; isotopic Thorium; 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; SB=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

000000814

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-113-014	Page 1 of 1
Collector T. Stephens, P. Pearson	Company Contact Joan Kessner Telephone No. 509-375-4655	Project Coordinator KESSNER, JH	Price Code ~~8C~~ 8B Data Turnaround ~~15~~ 3 Days
Project Designation 618-7 Burial Ground Verification Sampling	Sampling Location 618-7 Burial Ground - Verif. Sampling (Focused)	SAF No. RC-113	
Ice Chest No. AFS-04-122	Field Logbook No. EL-1395-13 COA RG61872000	Method of Shipment FED EX	
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A090035	Bill of Lading/Air Bill No. SEE OSR	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radiological contamination.

Special Handling and/or Storage

None

Preservation	Cool 4C	None	None
Type of Container	sG	P	P
No. of Container(s)	1	1	1
Volume	500mL	500mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
J17R34	SOIL	10/15/08	1070	X	X	X							FS-1
J17R35	SOIL	10/15/08	0905	X	X	X							FS-4
J17R36	SOIL	10/15/08	0915	X	X	X							FS-5

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From T. Stephens	Date/Time 1100 10-15-08	Received By/Stored In JE DeBuigne	Date/Time 1100 10/15/08
Relinquished By/Removed From JE DeBuigne	Date/Time 1145 10/15/08	Received By/Stored In J.E. Bernhard	Date/Time 1145 10-15-08
Relinquished By/Removed From J.E. Bernhard	Date/Time 1130 10-16-08	Received By/Stored In FED EX	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 10-17-08 0945	Received By/Stored In	Date/Time 10-17-08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA - 8270A (TCL); PAHs - 8310; PCBs - 8082; TPH-Diesel Range - WTPH-D + (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - motor oil (high boiling)).
(2) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium, Tin, Zirconium); Mercury - 7471 - (CV)
(3) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); isotopic Thorium; 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
SB=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

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

WCH-EE-011

00000015

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: WC HANFORD

Project/SAF/SOW/Release #: RC-113

Date: 10/17/08

LvLI Batch #: 0810L D92

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7901 1315 0980
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.6	°C	Cooler # AFS-04-122
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