0077004

SAF-RC-073
100-D/DR Burial Grounds & Remaining Sites – Other Solid Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 4/14/08
INITIAL/DATE

COMMENTS:

SDG K1152 SAF RC-073

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: **118-D-3, anomaly 100D-AN-08-007, 100-AN-08-008, and 100-AN-08-009**

RECEIVED
MAY 01 2008
EDMC

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SERVICES

RECEIVED
APR 2008

April 4, 2008

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

Reference: **P.O. #630**
Eberline Services R8-03-087-7783, SDG K1152

Dear Ms. Kessner:

Enclosed is a data report for one solid (other solid) sample designated under SAF No. RC-073 received at Eberline Services on March 19, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1152 was composed of one solid (other solid) sample designated under SAF No. RC-073 with a Project Designation of: 100-D/DR Burial Grounds & Remaining Sites – Other Solid Q.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on April 3, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Tritium Analysis

No problems were encountered during the course of the analysis.

2.3 Carbon-14 Analysis

No problems were encountered during the course of the analysis.

2.4 Nickel-63 Analysis

No problems were encountered during the course of the analysis.

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

04/04/08

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 K1152

SDG	7783
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1152

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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Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	04/03/08

SDG	7783
Contact	Melissa C. Mannion

REPORT GUIDE

Client	Hanford
Contract	No. S00W235A00
Case no	SDG K1152

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	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	04/03/08

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 K1152

SDG 7783
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1152

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R803087-01	J16DJ5	118-D-3, Anomaly 100D-AN	SOLID		RC-073	RC-073-034	03/12/08 12:45
R803087-02	J16DJ6	118-D-3, Anomaly 100D-AN	SOLID		RC-073	RC-073-035	03/12/08 12:53
R803087-03	J16DJ7	118-D-3, Anomaly 100D-AN	SOLID		RC-073	RC-073-036	03/12/08 13:02
R803087-04	Lab Control Sample		SOLID		RC-073		
R803087-05	Method Blank		SOLID		RC-073		
R803087-06	Duplicate (R803087-03)	118-D-3, Anomaly 100D-AN	SOLID		RC-073		03/12/08 13:02

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

SDG 7783
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1152

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
7783	RC-073-034	J16DJ5	SOLID	100.0	53.4 g		03/19/08	7	R803087-01	7783-001
	RC-073-035	J16DJ6	SOLID	100.0	57.9 g		03/19/08	7	R803087-02	7783-002
	RC-073-036	J16DJ7	SOLID	100.0	109 g		03/19/08	7	R803087-03	7783-003
		Method Blank	SOLID						R803087-05	7783-005
		Lab Control Sample	SOLID						R803087-04	7783-004
		Duplicate (R803087-03)	SOLID	100.0	109 g		03/19/08	7	R803087-06	7783-006

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

SDG 7783
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1152

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-044	20.6	3			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-044	11.0	3			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Solids	6148-044	10.0	1			1	1	1/1		
H	SOLID	Tritium in Solids	6148-044	10.0	1			1	1	1/1		
NI_L	SOLID	Nickel 63 in Solids	6148-044	11.2	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

SDG 7783
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1152

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R803087-01	J16DJ5			7783-001	93A/93		03/25/08	03/26/08	BW	Gross Alpha in Solids
03/12/08	118-D-3, Anomaly 100D-AN		SOLID	7783-001	93B/93		03/25/08	03/26/08	BW	Gross Beta in Solids
03/19/08	RC-073-034	RC-073								
R803087-02	J16DJ6			7783-002	93A/93		03/25/08	03/26/08	BW	Gross Alpha in Solids
03/12/08	118-D-3, Anomaly 100D-AN		SOLID	7783-002	93B/93		03/25/08	03/26/08	BW	Gross Beta in Solids
03/19/08	RC-073-035	RC-073								
R803087-03	J16DJ7			7783-003	93A/93		03/25/08	03/26/08	BW	Gross Alpha in Solids
03/12/08	118-D-3, Anomaly 100D-AN		SOLID	7783-003	93B/93		03/25/08	03/26/08	BW	Gross Beta in Solids
03/19/08	RC-073-036	RC-073		7783-003	C		03/27/08	03/31/08	BW	Carbon 14 in Solids
				7783-003	H		03/27/08	03/31/08	BW	Tritium in Solids
				7783-003	NI_L		03/27/08	03/31/08	BW	Nickel 63 in Solids
R803087-04	Lab Control Sample			7783-004	93A/93	R1	04/02/08	04/02/08	BW	Gross Alpha in Solids
			SOLID	7783-004	93B/93	R1	04/02/08	04/02/08	BW	Gross Beta in Solids
		RC-073		7783-004	C		03/27/08	03/31/08	BW	Carbon 14 in Solids
				7783-004	H		03/27/08	03/31/08	BW	Tritium in Solids
				7783-004	NI_L		03/27/08	03/31/08	BW	Nickel 63 in Solids
R803087-05	Method Blank			7783-005	93A/93		03/25/08	03/26/08	BW	Gross Alpha in Solids
			SOLID	7783-005	93B/93		03/25/08	03/26/08	BW	Gross Beta in Solids
		RC-073		7783-005	C		03/27/08	03/31/08	BW	Carbon 14 in Solids
				7783-005	H		03/27/08	03/31/08	BW	Tritium in Solids
				7783-005	NI_L		03/27/08	03/31/08	BW	Nickel 63 in Solids
R803087-06	Duplicate (R803087-03)			7783-006	93A/93		03/29/08	04/01/08	BW	Gross Alpha in Solids
03/12/08	118-D-3, Anomaly 100D-AN		SOLID	7783-006	93B/93		03/25/08	04/01/08	BW	Gross Beta in Solids
03/19/08		RC-073		7783-006	C		03/27/08	03/31/08	BW	Carbon 14 in Solids
				7783-006	H		03/27/08	03/31/08	BW	Tritium in Solids
				7783-006	NI_L		03/27/08	03/31/08	BW	Nickel 63 in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

SDG 7783
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1152

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-073	Gross Alpha in Solids	900.0_ALPHABETA_GPC	3			1	1	1	6
93B/93	RC-073	Gross Beta in Solids	900.0_ALPHABETA_GPC	3			1	1	1	6
C	RC-073	Carbon 14 in Solids	C14_COX_LSC	1			1	1	1	4
H	RC-073	Tritium in Solids	TRITIUM_COX_LSC	1			1	1	1	4
NI_L	RC-073	Nickel 63 in Solids	NI63_LSC	1			1	1	1	4
TOTALS				9			5	5	5	24

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

7783-005 Method Blank

METHOD BLANK

SDG	7783	Client/Case no	Hanford	SDG K1152	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R803087-05	Client sample id	Method Blank		
Dept sample id	7783-005	Material/Matrix		SOLID	
		SAF No	RC-073		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	1.89	3.3	5.60	10.0	U	93A
Gross Beta	12587-47-2	-0.573	3.2	5.59	15.0	U	93B
Tritium	10028-17-8	-1.85	3.3	5.87	400	U	H
Carbon 14	14762-75-5	-1.06	2.7	4.68	50.0	U	C
Nickel 63	13981-37-8	0.312	1.5	2.54	30.0	U	NI_L

100-D/DR Burial Grounds & Remaining

QC-BLANK #65148

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

7783-004

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7783

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1152

Contract No. S00W235A00

Lab sample id R803087-04

Dept sample id 7783-004

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-073

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	106	17	6.08	10.0		93A	112	4.5	95	62-138	70-130
Gross Beta	96.8	7.4	5.24	15.0		93B	112	4.5	86	82-118	80-120
Tritium	811	18	6.18	400		H	827	33	98	84-116	80-120
Carbon 14	2010	19	4.47	50.0		C	2130	85	94	85-115	80-120
Nickel 63	237	5.9	2.54	30.0		NI_L	266	11	89	83-117	80-120

100-D/DR Burial Grounds & Remaining

QC-LCS #65147

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

7783-006 J16DJ7

DUPLICATE

SDG	7783			Client/Case no	Hanford SDG K1152
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R803087-06	Lab sample id	R803087-03	Client sample id	J16DJ7
Dept sample id	7783-006	Dept sample id	7783-003	Location/Matrix	118-D-3, Anomaly 100D-AN SOLID
		Received	03/19/08	Collected/Weight	03/12/08 13:02 109 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-073-036 RC-073

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	18.1	7.4	5.82	10.0		93A	7.15	11	5.70		87	165	1.6
Gross Beta	1030	22	7.71	15.0		93B	1050	22	6.33		2	24	0.2
Tritium	13800	140	12.2	400		H	13600	140	11.8		1	21	0.2
Carbon 14	1380	16	4.87	50.0		C	1330	15	4.63		4	21	0.5
Nickel 63	17.6	2.3	2.84	30.0		NI_L	17.9	2.4	2.89		2	37	0.1

100-D/DR Burial Grounds & Remaining

QC-DUP#3 65149

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

7783-001 J16DJ5

DATA SHEET

SDG	7783	Client/Case no	Hanford SDG K1152
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R803087-01	Client sample id	J16DJ5
Dept sample id	7783-001	Location/Matrix	118-D-3, Anomaly 100D-AN SOLID
Received	03/19/08	Collected/Weight	03/12/08 12:45 53.4 g
% solids	100.0	Custody/SAF No	RC-073-034 RC-073

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-1.26	3.2	5.83	10.0	U	93A
Gross Beta	12587-47-2	88.8	8.3	8.92	15.0		93B

100-D/DR Burial Grounds & Remaining

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

7783-002 J16DJ6

DATA SHEET

SDG	7783	Client/Case no	Hanford	SDG K1152	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R803087-02	Client sample id	J16DJ6		
Dept sample id	7783-002	Location/Matrix	118-D-3, Anomaly 100D-AN	SOLID	
Received	03/19/08	Collected/Weight	03/12/08 12:53	57.9 g	
% solids	100.0	Custody/SAF No	RC-073-035	RC-073	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	2.15	4.1	4.79	10.0	U	93A
Gross Beta	12587-47-2	95.4	7.2	5.31	15.0		93B

100-D/DR Burial Grounds & Remaining

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

7783-003 J16DJ7

DATA SHEET

SDG	7783	Client/Case no	Hanford	SDG K1152	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R803087-03	Client sample id	J16DJ7		
Dept sample id	7783-003	Location/Matrix	118-D-3, Anomaly 100D-AN	SOLID	
Received	03/19/08	Collected/Weight	03/12/08 13:02	109 g	
% solids	100.0	Custody/SAF No	RC-073-036	RC-073	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	7.15	11	5.70	10.0		93A
Gross Beta	12587-47-2	1050	22	6.33	15.0		93B
Tritium	10028-17-8	13600	140	11.8	400		H
Carbon 14	14762-75-5	1330	15	4.63	50.0		C
Nickel 63	13981-37-8	17.9	2.4	2.89	30.0		NI_L

100-D/DR Burial Grounds & Remaining

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

Test 93A	Matrix SOLID
SDG 7783	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1152

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 6148-044					
R803087-01	93		7783-001	J16DJ5	U
R803087-02	93		7783-002	J16DJ6	U
R803087-03	93		7783-003	J16DJ7	7.15
R803087-04	93	R1	7783-004	LCS (QC ID=65147)	ok
R803087-05	93		7783-005	BLK (QC ID=65148)	U
R803087-06	93		7783-006	Duplicate (R803087-03)	ok

Nominal values and limits from method RDLs (pCi/g) 10.0

100-D/DR Burial Grounds & Remaining

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-044			2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 44													
R803087-01	93		J16DJ5	5.83	0.100			52		100			13	03/25/08	03/25	GRB-107
R803087-02	93		J16DJ6	4.79	0.100			53		100			13	03/25/08	03/25	GRB-109
R803087-03	93		J16DJ7	5.70	0.100			69		100			13	03/25/08	03/25	GRB-110
R803087-04	93	R1	LCS (QC ID=65147)	6.08	0.100			61		100				03/25/08	04/02	GRB-111
R803087-05	93		BLK (QC ID=65148)	5.60	0.100			60		100				03/25/08	03/25	GRB-112
R803087-06	93		Duplicate (R803087-03) (QC ID=65149)	5.82	0.100			70		100			17	03/25/08	03/29	GRB-209
Nominal values and limits from method				10.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD	MDA	5.64	± 0.890
FOR 6 SAMPLES	RESIDUE	61	± 15

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

Test	93B
Matrix	SOLID
SDG	7783
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1152

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 6148-044					
R803087-01	93		7783-001	J16DJ5	88.8
R803087-02	93		7783-002	J16DJ6	95.4
R803087-03	93		7783-003	J16DJ7	1050
R803087-04	93	R1	7783-004	LCS (QC ID=65147)	ok
R803087-05	93		7783-005	BLK (QC ID=65148)	U
R803087-06	93		7783-006	Duplicate (R803087-03)	ok
Nominal values and limits from method 100-D/DR Burial Grounds & Remaining				RDLs (pCi/g)	15.0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-044 2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 44																
R803087-01	93		J16DJ5	8.92	0.100			52		100			13	03/25/08	03/25	GRB-107
R803087-02	93		J16DJ6	5.31	0.100			53		100			13	03/25/08	03/25	GRB-109
R803087-03	93		J16DJ7	6.33	0.100			69		100			13	03/25/08	03/25	GRB-110
R803087-04	93	R1	LCS (QC ID=65147)	5.24	0.100			61		100				03/25/08	04/02	GRB-111
R803087-05	93		BLK (QC ID=65148)	5.59	0.100			60		100				03/25/08	03/25	GRB-112
R803087-06	93		Duplicate (R803087-03) (QC ID=65149)	7.71	0.100			70		100			13	03/25/08	03/25	GRB-114
Nominal values and limits from method				15.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 6 SAMPLES	MDA	6.52	± 2.99
	RESIDUE	61	± 15

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/03/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

Test	C
Matrix	SOLID
SDG	7783
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1152

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Carbon 14
Preparation batch 6148-044					
R803087-03			7783-003	J16DJ7	1330
R803087-04			7783-004	LCS (QC ID=65147)	ok
R803087-05			7783-005	BLK (QC ID=65148)	U
R803087-06			7783-006	Duplicate (R803087-03)	ok

Nominal values and limits from method RDLs (pCi/g) 50.0

100-D/DR Burial Grounds & Remaining

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 6148-044			2σ prep error 10.0 % Reference Lab Notebook #6148, pg. 44													
R803087-03			J16DJ7	4.63	0.309			100		50			15	03/27/08	03/27	LSC-004
R803087-04			LCS (QC ID=65147)	4.47	0.300			100		50				03/27/08	03/27	LSC-004
R803087-05			BLK (QC ID=65148)	4.68	0.300			100		50				03/27/08	03/27	LSC-004
R803087-06			Duplicate (R803087-03) (QC ID=65149)	4.87	0.292			100		50			15	03/27/08	03/27	LSC-004
Nominal values and limits from method				50.0	0.300					10			180			

PROCEDURES	REFERENCE	C14_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD	MDA	4.66	± 0.330
FOR 4 SAMPLES	YIELD	100	± 0

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

Test	H
Matrix	SOLID
SDG	7783
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1152

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 6148-044					
R803087-03			7783-003	J16DJ7	13600
R803087-04			7783-004	LCS (QC ID=65147)	ok
R803087-05			7783-005	BLK (QC ID=65148)	U
R803087-06			7783-006	Duplicate (R803087-03)	ok
Nominal values and limits from method				RDLs (pCi/g)	400
100-D/DR Burial Grounds & Remaining					

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 6148-044			2σ prep error 10.0 % Reference Lab Notebook #6148, pg. 44													
R803087-03			J16DJ7	11.8	0.309			100		13			15	03/27/08	03/27	LSC-005
R803087-04			LCS (QC ID=65147)	6.18	0.300			100		50				03/27/08	03/27	LSC-005
R803087-05			BLK (QC ID=65148)	5.87	0.300			100		50				03/27/08	03/27	LSC-005
R803087-06			Duplicate (R803087-03) (QC ID=65149)	12.2	0.292			100		14			15	03/27/08	03/27	LSC-005
Nominal values and limits from method				400	0.300					25			180			

PROCEDURES	REFERENCE	TRITIUM_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD	MDA	9.01	± 6.91
FOR 4 SAMPLES	YIELD	100	± 0

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1152

Test NI L Matrix SOLID
SDG 7783
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1152

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63
Preparation batch 6148-044					
R803087-03			7783-003	J16DJ7	17.9
R803087-04			7783-004	LCS (QC ID=65147)	ok
R803087-05			7783-005	BLK (QC ID=65148)	U
R803087-06			7783-006	Duplicate (R803087-03)	ok
Nominal values and limits from method				RDLs (pCi/g)	30.0
100-D/DR Burial Grounds & Remaining					

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 6148-044			2σ prep error 11.2 % Reference Lab Notebook #6148, pg. 44													
R803087-03			J16DJ7	2.89	0.500			86		50			15	03/27/08	03/27	LSC-005
R803087-04			LCS (QC ID=65147)	2.54	0.500			98		50				03/27/08	03/27	LSC-005
R803087-05			BLK (QC ID=65148)	2.54	0.500			97		50				03/27/08	03/27	LSC-005
R803087-06			Duplicate (R803087-03) (QC ID=65149)	2.84	0.500			87		50			15	03/27/08	03/27	LSC-005
Nominal values and limits from method				30.0	0.500			30-105		25			180			

PROCEDURES	REFERENCE	NI63_LSC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	2.70	±	0.377
	YIELD	92	±	13

Lab id EBRLNE
Protocol Hanford
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Form DVD-LMS
Version 3.06
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SDG 7783
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1152

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/03/08

SDG	7783
Contact	Melissa C. Mannion

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Client	Hanford
Contract	No. S00W235A00
Case no	SDG K1152

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

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Client Hanford
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WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

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GUIDE, cont.

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DATA SHEET

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

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

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

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LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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DUPLICATE

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

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

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

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

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

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REPORT GUIDE

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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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MATRIX SPIKE

for the recovery.

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

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

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METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

7783 K1152

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-034	Page 1 of 1

Collector D.W.Shea D. Everhart/SEC	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 15 days		
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, anomaly 100D-AN-08-007 K1152 (7783)		SAF No. RC-073
Ice Chest No.	Field Logbook No. EL-1607-3	COA R118D32600	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. See OPSC		Bill of Lading/Air Bill No.

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	None	None							
Type of Container	G	aG	G/P	G/P							
No. of Container(s)	1	1	1	1							
Volume	60mL	60mL	5g	60g							
SAMPLE ANALYSIS	See item (1) in Special Instructions. DWShea 3/12/08	TOC - 415.1	Gross Alpha; Gross Beta	See item (2) in Special Instructions. DWShea 3/12/08							

Sample No.	Matrix *	Sample Date	Sample Time										
J16DJ5	OTHER SOLID	3/12/08	1245.	✓	✓	✓	✓						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D. Everhart	1420 3-12-08	DWShea DWShea	3/12/08 1420
DWShea DWShea	3/12/08 1731	Fridge 1B	3/12/08 1731
FED EX		Fry	03/19/08 10:00

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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-073-035	Page 1 of 1

Collector D.W.Shea D.Everhart/SEC	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 15 days
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, anomaly 100D-AN-08-008 K1152 (7783)		SAF No. RC-073		
Ice Chest No. A0KB0-001	Field Logbook No. EL-1607-3	COA R118D32600	Method of Shipment Fed Ex		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. See OPSC A080214		Bill of Lading/Air Bill No. See GSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	None	None							
Type of Container	G	aG	G/P	G/P							
No. of Container(s)	1	1	1	1							
Volume	60ml.	60ml.	5g	60g							
SAMPLE ANALYSIS	See item (1) in Special Instructions. DWShea 3/12/08	TOC - 415.1	Gross Alpha; Gross Beta	See item (2) in Special Instructions. DWShea 3/12/08							
Sample No. / Matrix * / Sample Date / Sample Time											
J16DJ6 / OTHER SOLID / 3/12/08 / 1253	✓	✓	✓	✓							

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D.Everhart	3.12.08 1420	DWShea DWSHEA	3/12/08 1420
DWShea DWShea	3/12/08 1731	Fricke LB	3/12/08 1731
LOGO/LB 0945	3/18/08	mstankovich	3/18/08 0945
mstankovich	3/18/08 1500	Fed Ex	
FED EX		[illegible]	03/19/08 10:00

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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-073-036	Page 1 of 1

Collector D.W.Shea D. Everhart / SEC	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 15 days (RCF 1 day)		
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, anomaly 100D-AN-08-009 K1152 (7783)	SAF No. RC-073	
Ice Chest No. RCC-07-004	Field Logbook No. EL-1607-3	COA R118D32600	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. See OPSC NA		Bill of Lading/Air Bill No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	None						
Type of Container	G	aG	G	G/P	G/P	G/P					
No. of Container(s)	1	1	1	1	1	1					
Volume	60mL	60mL	60mL	5g	60g	60g					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	TOC - 415.1	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	H^3 C^{14} Sr 90					
	DWShea 3/12/08				DWShea 3/12/08	3/18/08					
						Ni-63					
Sample No.	Matrix *	Sample Date	Sample Time								
J16DJ7	OTHER SOLID	3/12/08	1302	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: D. Everhart Date/Time: 3-12-08 1420	Received By/Stored In: DWShea DWShea Date/Time: 3/12/08 1420
Relinquished By/Removed From: DWShea DWShea Date/Time: 3/12/08 1731	Received By/Stored In: Fricker IB Date/Time: 3/12/08 1731
Relinquished By/Removed From: 1060/IB Date/Time: 3/18/08 0845	Received By/Stored In: MStankovich Date/Time: 0845 3/18/08
Relinquished By/Removed From: WCH MStankovich Date/Time: 0845 3/18/08	Received By/Stored In: Fed Ex Date/Time:
Relinquished By/Removed From: FED EX Date/Time:	Received By/Stored In: Date/Time: 03/19/08 0900
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Matrix *

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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 SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

JK 3/19/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 03/19/08 10:00 CoC No. RC-073-034, 035, 036

Container I.D. No. 16 CHESTS Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

RCC-07-004, ROKBO-001

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 3 Sample Matrix X
7. Number of containers per sample: _____ (Or see CoC X _____)
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:
    NOTE: ALL SAMPLES IN 60 g JARS.
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 03/19/08 Time: 11:15

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

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 09 MAY 07

LIONVILLE LABORATORY INC.

11 April 2008

RECEIVED APR 2008

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0803L783
SDG #	K1152
SAF #	RC-073
Date Received	3/20/08
# Samples	3
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

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

RECEIVED
APR 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1152

DATE RECEIVED: 03/20/08 LVL LOT # :0803L783

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16DJ5						
TCLP	001	SO	08LT0023	03/12/08	03/24/08	03/25/08
J16DJ6						
TCLP	002	SO	08LT0023	03/12/08	03/24/08	03/25/08
J16DJ7						
TCLP	003	SO	08LT0023	03/12/08	03/24/08	03/25/08
J16DJ5						
SILVER, TCLP LEACHAT	004	W	08L0115	03/25/08	03/26/08	03/27/08
ARSENIC, TCLP LEACHA	004	W	08L0115	03/25/08	03/26/08	03/27/08
BARIUM, TCLP LEACHAT	004	W	08L0115	03/25/08	03/26/08	03/27/08
CADMIUM, TCLP LEACHA	004	W	08L0115	03/25/08	03/26/08	03/27/08
CHROMIUM, TCLP LEACH	004	W	08L0115	03/25/08	03/26/08	03/27/08
MERCURY, TCLP LEACHA	004	W	08C0052	03/25/08	03/25/08	03/26/08
MERCURY, TCLP LEACHA	004 REP	W	08C0052	03/25/08	03/25/08	03/26/08
LEAD, TCLP LEACHATE	004	W	08L0115	03/25/08	03/26/08	03/27/08
SELENIUM, TCLP LEACH	004	W	08L0115	03/25/08	03/26/08	03/27/08
J16DJ6						
SILVER, TCLP LEACHAT	005	W	08L0115	03/25/08	03/26/08	03/27/08
SILVER, TCLP LEACHAT	005 REP	W	08L0115	03/25/08	03/26/08	03/27/08
SILVER, TCLP LEACHAT	005 MS	W	08L0115	03/25/08	03/26/08	03/27/08
ARSENIC, TCLP LEACHA	005	W	08L0115	03/25/08	03/26/08	03/27/08
ARSENIC, TCLP LEACHA	005 REP	W	08L0115	03/25/08	03/26/08	03/27/08
ARSENIC, TCLP LEACHA	005 MS	W	08L0115	03/25/08	03/26/08	03/27/08
BARIUM, TCLP LEACHAT	005	W	08L0115	03/25/08	03/26/08	03/27/08
BARIUM, TCLP LEACHAT	005 REP	W	08L0115	03/25/08	03/26/08	03/27/08
BARIUM, TCLP LEACHAT	005 MS	W	08L0115	03/25/08	03/26/08	03/27/08
CADMIUM, TCLP LEACHA	005	W	08L0115	03/25/08	03/26/08	03/27/08
CADMIUM, TCLP LEACHA	005 REP	W	08L0115	03/25/08	03/26/08	03/27/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1152

DATE RECEIVED: 03/20/08 LVL LOT # :0803L783

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TCLP LEACHA	005 MS	W	08L0115	03/25/08	03/26/08	03/27/08
CHROMIUM, TCLP LEACH	005	W	08L0115	03/25/08	03/26/08	03/27/08
CHROMIUM, TCLP LEACH	005 REP	W	08L0115	03/25/08	03/26/08	03/27/08
CHROMIUM, TCLP LEACH	005 MS	W	08L0115	03/25/08	03/26/08	03/27/08
MERCURY, TCLP LEACHA	005	W	08C0052	03/25/08	03/25/08	03/26/08
MERCURY, TCLP LEACHA	005 MS	W	08C0052	03/25/08	03/25/08	03/26/08
LEAD, TCLP LEACHATE	005	W	08L0115	03/25/08	03/26/08	03/27/08
LEAD, TCLP LEACHATE	005 REP	W	08L0115	03/25/08	03/26/08	03/27/08
LEAD, TCLP LEACHATE	005 MS	W	08L0115	03/25/08	03/26/08	03/27/08
SELENIUM, TCLP LEACH	005	W	08L0115	03/25/08	03/26/08	03/27/08
SELENIUM, TCLP LEACH	005 REP	W	08L0115	03/25/08	03/26/08	03/27/08
SELENIUM, TCLP LEACH	005 MS	W	08L0115	03/25/08	03/26/08	03/27/08
J16DJ7						
SILVER, TCLP LEACHAT	006	W	08L0115	03/25/08	03/26/08	03/27/08
ARSENIC, TCLP LEACHA	006	W	08L0115	03/25/08	03/26/08	03/27/08
BARIUM, TCLP LEACHAT	006	W	08L0115	03/25/08	03/26/08	03/27/08
CADMIUM, TCLP LEACHA	006	W	08L0115	03/25/08	03/26/08	03/27/08
CHROMIUM, TCLP LEACH	006	W	08L0115	03/25/08	03/26/08	03/27/08
MERCURY, TCLP LEACHA	006	W	08C0052	03/25/08	03/25/08	03/26/08
LEAD, TCLP LEACHATE	006	W	08L0115	03/25/08	03/26/08	03/27/08
SELENIUM, TCLP LEACH	006	W	08L0115	03/25/08	03/26/08	03/27/08

LAB QC:

SILVER LABORATORY	LC1 BS	W	08L0115	N/A	03/26/08	03/27/08
SILVER, TCLP LEACHAT	MB1	W	08L0115	N/A	03/26/08	03/27/08
SILVER, TCLP LEACHAT	MB2	W	08L0115	N/A	03/26/08	03/27/08
ARSENIC LABORATORY	LC1 BS	W	08L0115	N/A	03/26/08	03/27/08
ARSENIC, TCLP LEACHA	MB1	W	08L0115	N/A	03/26/08	03/27/08
ARSENIC, TCLP LEACHA	MB2	W	08L0115	N/A	03/26/08	03/27/08
BARIUM LABORATORY	LC1 BS	W	08L0115	N/A	03/26/08	03/27/08
BARIUM, TCLP LEACHAT	MB1	W	08L0115	N/A	03/26/08	03/27/08
BARIUM, TCLP LEACHAT	MB2	W	08L0115	N/A	03/26/08	03/27/08
CADMIUM LABORATORY	LC1 BS	W	08L0115	N/A	03/26/08	03/27/08
CADMIUM, TCLP LEACHA	MB1	W	08L0115	N/A	03/26/08	03/27/08
CADMIUM, TCLP LEACHA	MB2	W	08L0115	N/A	03/26/08	03/27/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1152

DATE RECEIVED: 03/20/08 LVL LOT # :0803L783

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	W	08L0115	N/A	03/26/08	03/27/08
CHROMIUM, TCLP LEACH	MB1	W	08L0115	N/A	03/26/08	03/27/08
CHROMIUM, TCLP LEACH	MB2	W	08L0115	N/A	03/26/08	03/27/08
MERCURY LABORATORY	LC1 BS	W	08C0052	N/A	03/25/08	03/26/08
MERCURY, TOTAL	MB1	W	08C0052	N/A	03/25/08	03/26/08
MERCURY, TCLP LEACHA	MB2	W	08C0052	N/A	03/25/08	03/26/08
MERCURY, TCLP LEACHA	MB3	W	08C0052	N/A	03/25/08	03/26/08
LEAD LABORATORY	LC1 BS	W	08L0115	N/A	03/26/08	03/27/08
LEAD, TCLP LEACHATE	MB1	W	08L0115	N/A	03/26/08	03/27/08
LEAD, TCLP LEACHATE	MB2	W	08L0115	N/A	03/26/08	03/27/08
SELENIUM LABORATORY	LC1 BS	W	08L0115	N/A	03/26/08	03/27/08
SELENIUM, TCLP LEACH	MB1	W	08L0115	N/A	03/26/08	03/27/08
SELENIUM, TCLP LEACH	MB2	W	08L0115	N/A	03/26/08	03/27/08

Analytical Report

Client: TNU-HANFORD RC-073
LVL#: 0803L783
SDG/SAF#: K1152/RC-073

W.O.#: 11343-606-001-9999-00
Date Received: 03-20-08

METALS CASE NARRATIVE

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

1. This narrative covers the analyses of 3 TCLP leachates.

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

   All samples for ICP analytes were run at a 6-fold dilution 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).

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

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

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

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the

9. The duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

10. The TCLP extract from sample J16DJ6 was selected for the matrix spike (MS) for this analytical batch.

LVLI LIONVILLE LABORATORY INC.
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 20 pages.

11. The matrix spike for Silver was below 50% recovery (0.55%). The recovery in the TCLP Leachate was outside 80-120% of the action level so standard addition was not required per Federal Register, Vol.57, No.227, Nov. 24, 1992, page 55117.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/7/08
Date

alm/m03-783

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within Lot#: 0803L783

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A ✓3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	✓7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-W1-033/M-03/01

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 04/03/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J16DJ5	Silver, TCLP Leachate	6.0	u	UG/L	6.0	6.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	52.6		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.3		UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	84.6		UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0
-005	J16DJ6	Silver, TCLP Leachate	6.0	u	UG/L	6.0	6.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	43.0		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	21.4		UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0
-006	J16DJ7	Silver, TCLP Leachate	6.0	u	UG/L	6.0	6.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	204		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	47.5		UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	280		UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/03/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0115-MB1	Silver, TCLP Leachate	1.0	u	UG/L	1.0	1.0
		Arsenic, TCLP Leachate	5.0	u	UG/L	5.0	1.0
		Barium, TCLP Leachate	1.0	u	UG/L	1.0	1.0
		Cadmium, TCLP Leachate	0.50	u	UG/L	0.50	1.0
		Chromium, TCLP Leachate	2.0	u	UG/L	2.0	1.0
		Lead, TCLP Leachate	3.0	u	UG/L	3.0	1.0
		Selenium, TCLP Leachate	6.0	u	UG/L	6.0	1.0
BLANK2	08L0115-MB2	Silver, TCLP Leachate	7.7		UG/L	6.0	6.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	6.0	u	UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Lead, TCLP Leachate	18.0	u	UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0
BLANK1	08C0052-MB1	Mercury, Total	0.06	u	UG/L	0.06	1.0
BLANK2	08C0052-MB2	Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
BLANK3	08C0052-MB3	Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/03/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-005	J16DJ6	Silver, TCLP Leachate	27.5	6.0 u	5000	0.55	6.0
		Arsenic, TCLP Leachate	4570	30.0 u	5000	91.4	6.0
		Barium, TCLP Leachate	90900	43.0	100000	90.9	6.0
		Cadmium, TCLP Leachate	932	3.0 u	1000	93.2	6.0
		Chromium, TCLP Leachat	4630	12.0 u	5000	92.5	6.0
		Mercury, TCLP Leachate	200	0.06u	200	100.2	50.0
		Lead, TCLP Leachate	4670	21.4	5000	92.9	6.0
		Selenium, TCLP Leachat	897	36.0 u	1000	89.7	6.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/03/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-004REP	J16DJ5	Mercury, TCLP Leachate	0.06u	0.06u	NC	1.0
-005REP	J16DJ6	Silver, TCLP Leachate	6.0 u	6.0 u	NC	6.0
		Arsenic, TCLP Leachate	30.0 u	30.0 u	NC	6.0
		Barium, TCLP Leachate	43.0	47.2	9.3	6.0
		Cadmium, TCLP Leachate	3.0 u	3.0 u	NC	6.0
		Chromium, TCLP Leachate	12.0 u	12.0 u	NC	6.0
		Lead, TCLP Leachate	21.4	18.0 u	NC	6.0
		Selenium, TCLP Leachate	36.0 u	36.0 u	NC	6.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/03/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0115-LC1	Silver, LCS	502	500	UG/L	100.3
		Arsenic, LCS	9650	10000	UG/L	96.5
		Barium, LCS	5020	5000	UG/L	100.4
		Cadmium, LCS	246	250	UG/L	98.3
		Chromium, LCS	497	500	UG/L	99.3
		Lead, LCS	2580	2500	UG/L	103.1
		Selenium, LCS	9340	10000	UG/L	93.4
LCS1	08C0052-LC1	Mercury, LCS	5.1	5.0	UG/L	102.6

Lionville Laboratory Incorporated Logbook #: 440

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0115
Date/Time Initiated: 3/26/08 1100
Date/Time Completed: 1440
Analyst(s): MW
Matrix: Soil Water Other: leachates
Instr. Type: AA ICP
Parameters: * HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U-
** RCRA
Digested / Undigested (circle one)
Balance #: N/A
Balance Cal Verif: Y NA
Hot Plate Temp: 920

TMW

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 glass

COC Batch # (see matrix limit above)	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
08032717-004 *		100 ml	100 ml	<2	TC	N/A	clear/colorless	N/A	N/A
005									
005R									
005S	1.0 ml (*)								
08032756-003 **									
004									
004R									
004S	1.0 ml **								
08032783-004									
005									
005R									
005S	1.0 ml **								
006									
08LT0023-LB1 *									
08L0115-MB1									
LC1	1.0 ml (*)								

MW 3/26/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-078-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025 W.E.
HCL ~~E45049~~ MW 3/26/08
H_2O_2
1:1 HNO_3
1:1 HCL 6072-069-03

File ID#: IC011501 IC011502
LIMS Transfer: Y N Updated
Data Review By/Date: PMP, 03/28/08

(*) also 0.25 ml 6072-076-06 (Bi)
0.25 ml 6072-076-07 (P-)
0.25 ml 6072-078-01 (U-)

** (only) spiked with:
6072-73-03
6072-73-05 } 1 ml each

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: TLB
Date 3/25/08
Start Time/Temp: 1655 | 99°
End Time/Temp: 1855 | 96°

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

Prep Batch: 08C0052
Worksheet: HG032601
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	WK			33mL	33mL	
0.2 µg/L	CT	0.0667				
1.0	B2	0.334				
2.0	K17	0.667				
5.0	297	1.667				
10.0	PC	3.334				
ICV	P18	0.0834	2.5			
CCV	522	0.167	5.0			
ICB/CCB	CM					
MB1	XO					PBW152
LC1	PD	0.167	5.0			LCSW152
0803L717-004	A4					
WAR	A1					
WAS	194	0.667	200			
0803L723-019	P3					
019S	E	0.667	200			
019T	TR	0.667	200			
020	AHA					
021	5D0					
0803L756-003	G12					R
~~TLB 3/25/08~~ 003R	5T					
004 ~~003S~~	3P					
004S	PF	0.667	200			
0803L761-019	222					
019S	1C	0.667	200			
019T	857	0.667	200			
020	X5					

Standard:	ID	Prep Date/Time
ICAL/MS	R1 6072-75-07B	3/25/08 1115
ICV/CCV/LCS	US 6072-75-08A	

Reviewed By/Date: [signature] 3/31/08

see book # 9368 for std traceability information

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

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: TEB
Date 3/25/08
Start Time/Temp:
End Time/Temp: See page 46

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

Prep Batch: 08C0052
Worksheet: HG032601
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0803L761-021	PT			33mL	33mL	
0803L783-004	8T					R
TEB 3/25/08 004R	CGR					
005 ~~0245~~	5H					
005S	7J7	0.667	200			
006	CB2					
0803L718-002	HR					
002R	27					
0025	DX	0.667	200			
08LT0022-LB1	WN					
08LT0023-LB1	JB					
0803L717-005	SE					

TEB 3/25/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 46	

Reviewed By/Date: [signature] 3/31/08

see book # 9368 for std traceability information

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

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

onville Laboratory Use Only

08031783

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

ent TNU Hanford RC-073

t. Final Proj. Sampling Date

oject# 11343-606-001-9999-00

oject Contact/Phone#

onville Laboratory Project Manager Orlette Johnson

SW846 Del STD TAT 15 Days

ate Rec'd 3.20.08 Date Due 4-4-08

Refrigerator #								A	B	C					
								3	3	3					
#/Type Container	Liquid / Solid							1gl	1gl	1gl		LEACHATE			
Volume								60	60	60					
Preservatives								—	—	—					
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			TCLP Metal + Hg	CN	TOC					

ATRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
														TCLP	ISFD ICNTO	IOCT		RCRA		
	001	J16DJ5			SO	3.12.08	1245							X		X				
	002	J16DJ6			↓	↓	1253							X		X				
	003	J16DJ7			↓	↓	1302							X	X	X				
	004	J5TCLP05-001			L													X		
	005	J6 ↓ 002			↓	↓												X		
	006	J7 ↓ 003			↓	↓												X		

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

pecial Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[signature]	3.20.08	

Relinquished by	Received by	Date	Time

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

000000016

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-034	Page 1 of 1

Collector D.W.Shea D. Everhart/SEC	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH	Price Code 9K	Data Turnaround 15 days
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, anomaly 100D-AN-08-007		SAF No. RC-073		
ice Chest No.	Field Logbook No. EL-1607-3	COA R118D32600	Method of Shipment Fed Ex		
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. See OPSC		Bill of Lading/Air Bill No.		

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	None	None							
Type of Container	G	aG	G/P	G/P							
No. of Container(s)	1	1	1	1							
Volume	60mL	60mL	5g	60g							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	TOC - 415.1	Gross Alpha, Gross Beta	See item (2) in Special Instructions.							
			DWShea 3/12/08								
Sample No. / Matrix * / Sample Date / Sample Time											
6DJ5 / OTHER SOLID / 3/12/08 / 1245.	✓	✓	✓	✓							

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From	Date/Time 1420	Received By/Stored In	Date/Time
[illegible] D. Everhart 3-12-08		DWShea DWShea 3/12/08 1420	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DWShea DWShea 3/12/08 1731		Fridge 1B 3/12/08 1731	
Relinquished By/Removed From 3/18/08	Date/Time 0930	Received By/Stored In	Date/Time 0930
060/1B MStankovich 3/18/08		MStankovich 3/18/08	
Relinquished By/Removed From	Date/Time 1500	Received By/Stored In	Date/Time
MStankovich 3/18/08		Fed Ex	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex 3-20-08 0940		[illegible] 3-20-08 0940	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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

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

CH-EE-011

0000000017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-035	Page 1 of 1
ollector D.W.Shea D.Everhart/SEC	Company Contact D.W.Shea; Telephone No. 521-6014	Project Coordinator KESSNER, JH	Price Code 9K; Data Turnaround 15 days
oject Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, anomaly 100D-AN-08-008	SAF No. RC-073	
e Chest No.	Field Logbook No. EL-1607-3; COA R118D32600	Method of Shipment Fed Ex	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. See OPSC	Bill of Lading/Air Bill No.	

OSSIBLE SAMPLE HAZARDS/REMARKS

otentially radioactive

pecial Handling and/or Storage

Preservation	None	Cool 4C	None	None							
Type of Container	G	aG	G/P	G/P							
No. of Container(s)	1	1	1	1							
Volume	60mL	60mL	5g	60g							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	TOC - 415.1	Gross Alpha Gross Beta	See item (2) in Special Instructions.							

DWSHEA 3/12/08

Sample No.	Matrix *	Sample Date	Sample Time										
6DJ6	OTHER SOLID	3/12/08	1253	✓	✓	✓	✓						

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	1420 3.12.08	DWSHEA DWSHEA	3/12/08 1420
DWSHEA DWSHEA	3/12/08 1731	Fridge IB	3/12/08 1731
060/IB	3/18/08 0930	MLW MSTankouch	0930 3/18/08
MLW MSTankouch	1500 3/18/08	Fed Ex	
Fed Ex	3.20.08 0940	[signature]	3.20.08 0940

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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

/CH-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-036	Page 1 of 1

Collector: D.W.Shea D. Everhart / SEC	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 15 days (RCF 1 day)		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location: 118-D-3, anomaly 100D-AN-08-009		SAF No.: RC-073
Ice Chest No.: RCC-07-013	Field Logbook No.: EL-1607-3	COA: R118D32600	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: See OPSC NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	None						
Type of Container	G	aG	G	G/P	G/P	G/P					
No. of Container(s)	1	1	1	1	1	1					
Volume	60mL	60mL	60mL	5g	60g	60g					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	TOC - 415.1	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha, Gross Beta	See item (2) in Special Instructions.	H^3 C^{14} Sr					
Sample No.	Matrix *	Sample Date	Sample Time								
J16DJ7	OTHER SOLID	3/12/08	1302	✓	✓	✓	✓	✓	✓		

DWSHEW DWSHEW 3/12/08

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: D. E. Everhart 3-12-08 Date/Time 1420	Received By/Stored In: DWSHEW DWSHEW Date/Time 3/12/08 1420
Relinquished By/Removed From: DWSHEW DWSHEW Date/Time 3/12/08 1731	Received By/Stored In: Fridge 1B Date/Time 3/12/08 1731
Relinquished By/Removed From: 060/1B Date/Time 3/18/08 0830	Received By/Stored In: MSTankovich Date/Time 3/18/08 0830
Relinquished By/Removed From: MSTankovich WCH Date/Time 3/18/08 1800	Received By/Stored In: Fed Ex Date/Time
Relinquished By/Removed From: Fed Ex Date/Time 3.20.08 0940	Received By/Stored In: Date/Time 3.20.08 0940
Relinquished By/Removed From: Date/Time	Received By/Stored In: Date/Time

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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
SL=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

000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford **Date:** 3-20-08

Project/SAF/SOW/Release #: RC-073

LvLI Batch #: 08031783 **Sample Custodian:** [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier (Fed) Ex		Airbill # 7910 2400 5253 7904 7224 4712
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 3.1 °C 2.0 °C		Cooler # AFS-04-004 # RC-07-13
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc

RECEIVED
2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-073 K1152

DATE RECEIVED: 03/20/08 LVL LOT # :0803L783

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16DJ5						
TOTAL ORGANIC CARBON	001	SO	08LTZ002	03/12/08	04/01/08	04/03/08
TCLP	001	SO	08LT0023	03/12/08	03/24/08	03/25/08
J16DJ6						
TOTAL ORGANIC CARBON	002	SO	08LTZ002	03/12/08	04/01/08	04/03/08
TCLP	002	SO	08LT0023	03/12/08	03/24/08	03/25/08
J16DJ7						
TOTAL CYANIDE	003	SO	08LC019	03/12/08	03/21/08	03/21/08
TOTAL CYANIDE	003 REP	SO	08LC019	03/12/08	03/21/08	03/21/08
TOTAL CYANIDE	003 MS	SO	08LC019	03/12/08	03/21/08	03/21/08
TOTAL ORGANIC CARBON	003	SO	08LTZ002	03/12/08	04/01/08	04/03/08
TOTAL ORGANIC CARBON	003 REP	SO	08LTZ002	03/12/08	04/01/08	04/03/08
TOTAL ORGANIC CARBON	003 MS	SO	08LTZ002	03/12/08	04/01/08	04/03/08
SULFIDE	003	SO	08LSD018	03/12/08	03/26/08	03/26/08
SULFIDE	003 REP	SO	08LSD018	03/12/08	03/26/08	03/26/08
SULFIDE	003 MS	SO	08LSD018	03/12/08	03/26/08	03/26/08
TCLP	003	SO	08LT0023	03/12/08	03/24/08	03/25/08

LAB QC:

TOTAL ORGANIC CARBON	MB1	S	08LTZ002	N/A	04/01/08	04/03/08
TOTAL ORGANIC CARBON	MB1 BS	S	08LTZ002	N/A	04/01/08	04/03/08
TOTAL CYANIDE	LCS L	S	08LC019	N/A	03/21/08	03/21/08
TOTAL CYANIDE	LCS L	S	08LC019	N/A	03/21/08	03/21/08
TOTAL CYANIDE	MB1	S	08LC019	N/A	03/21/08	03/21/08
SULFIDE	MB1	S	08LSD018	N/A	03/26/08	03/26/08
SULFIDE	MB1 BS	S	08LSD018	N/A	03/26/08	03/26/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-073 K1152
LVL#: 0803L783

W.O.#: 11343-606-001-9999-00
Date Received: 03-20-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 3 solid samples.

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

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

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

4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of Sulfide as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits.

7. The matrix spike (MS) recovery for Total Cyanide was within the 75-125% control limits however MS recoveries for Total Organic Carbon and Sulfide were above the control limits that may be attributed to sample inhomogeniety.

8. The replicate analyses were within the 20% RPD control limit.

9. Results for solid samples are reported on an "as-received" weight basis.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/10/08
Date

njp\i03-783

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	__ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		__ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		✓ 9060 (mod.)	✓ Lloyd Kahn (mod)/ 41 (m
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/09/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16DJ5	Total Organic Carbon	1050	MG/KG	58.0	1.0
-002	J16DJ6	Total Organic Carbon	973	MG/KG	50.5	1.0
-003	J16DJ7	Cyanide, Total	0.49 u	MG/KG	0.49	1.0
		Total Organic Carbon	2610	MG/KG	63.5	1.0
		Sulfide	20.0 u	MG/KG	20.0	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/09/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LTZ002-MB1	Total Organic Carbon	4.7	u	MG/KG	4.7	1.0
BLANK1	08LC019-MB1	Cyanide, Total	0.49	u	MG/KG	0.49	1.0
BLANK10	08LSD018-MB1	Sulfide	19.9	u	MG/KG	19.9	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/09/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-003	J16DJ7	Cyanide, Total	4.80	0.49u	4.96	96.7	1.0
		Total Organic Carbon	11300	2610	6560	132.0	1.0
		Sulfide	256	1.0	186	137.6	1.0
BLANK10	08LTZ002-MB1	Total Organic Carbon	405	4.7 u	400	101.3	1.0
BLANK10	08LSD018-MB1	Sulfide	167	19.9 u	181	91.9	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/09/08

CLIENT: TNUHANFORD RC-073 K1152 LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-003REP	J16DJ7	Cyanide, Total	0.49u	0.48u	NC	1.0
		Total Organic Carbon	2610	2970	13.2	1.0
		Sulfide	20.0 u	19.8 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/09/08

CLIENT: TNUHANFORD RC-073 K1152

LVL LOT #: 0803L783

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	08LC019-LCS1	Cyanide, Total LCS	2.00	2.0	MG/KG	99.8
LCSS2	08LC019-LCS2	Cyanide, Total LCS	9.80	10.0	MG/KG	98.0

onville Laboratory Use Only

08031783

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent TNU Hanford RC-073

t. Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager Arlette Johnson

SW846 Del STD TAT 15 Days

te Rec'd 3-20-08 Date Due 4-4-08

		A	B	C		
Refrigerator #		3	3	3		
#/Type Container	Liquid / Solid	1gl	1gl	1gl		LEACHATE
Volume		60	60	60		
Preservatives		—	—	—		
ANALYSES REQUESTED	ORGANIC: VOA, BNA, Pest/PCB, Herb	INORG: TCLP Metal + Hg	CN	TOC		

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ITCLP	ISFD ICNTO	IOCT		RCRA
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J16DJ5			SO	3-12-08	1245	X		X		
	002	J16DJ6			↓	↓	1253	X		X		
	003	J16DJ7			↓	↓	1302	X	X	X		
	004	J5TCLP05-001			L							X
	005	J4 002			↓	↓						X
	006	J7 003			↓	↓						X

Lionville Laboratory Use Only

ecial Instructions:

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[signature]	3-20-08	

Relinquished by	Received by	Date	Time

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

000000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-034	Page 1 of 1

Collector D.W.Shea D. Everhart/SEC	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Project Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, anomaly 100D-AN-08-007		SAF No. RC-073
ice Chest No.	Field Logbook No. EL-1607-3	COA R118D32600	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. See OPSC		Bill of Lading/Air Bill No.

Price Code: 9K

Data Turnaround: 15 days

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	None	None								
Type of Container	G	aG	G/P	G/P								
No. of Container(s)	1	1	1	1								
Volume	60mL	60mL	5g	60g								
SAMPLE ANALYSIS	See item (1) in Special Instructions	TOC - 415.1	Gross Alpha; Gross Beta	See item (2) in Special Instructions.								

DWSHEA 3/12/08

Sample No.	Matrix *	Sample Date	Sample Time										
5DJ5	OTHER SOLID	3/12/08	1245.	✓	✓	✓	✓						

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: D. Everhart 3-12-08	Date/Time 1420	Received By/Stored In: DWShea DWShea 3/12/08 1420 — Date/Time
Relinquished By/Removed From: DWShea DWShea 3/12/08 1731	Date/Time	Received By/Stored In: Fridge 1B 3/12/08 1731 — Date/Time
Relinquished By/Removed From: 60/1B MSTankovich 3/18/08	Date/Time 3/18/08 0930	Received By/Stored In: MSTankovich 3/18/08 — Date/Time 0930
Relinquished By/Removed From: MSTankovich 3/18/08	Date/Time 1500	Received By/Stored In: Fed Ex — Date/Time
Relinquished By/Removed From: Fed Ex 3-20-08 0940	Date/Time	Received By/Stored In: [illegible] 3-20-08 0940 — Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Matrix *
S - Soil
SL - Sediment
SO - Solid
SG - 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

H-EE-011

000000011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-035	Page 1 of 1

ollector D.W.Shea D.Everhart/SEC	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH
Price Code 9K	Data Turnaround 15 days		
rolect Designation 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location 118-D-3, anomaly 100D-AN-08-008		SAF No. RC-073
e Chest No.	Field Logbook No. EL-1607-3	COA R118D32600	Method of Shipment Fed Ex
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. See OPSC		Bill of Ladine/Air Bill No.

OSSIBLE SAMPLE HAZARDS/REMARKS

otentially radioactive

pecial Handling and/or Storage

Preservation	None	Cool 4C	None	None							
Type of Container	G	aG	G/P	G/P							
No. of Container(s)	1	1	1	1							
Volume	60mL	60mL	5g	60g							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	TOC - 415.1	Gross Alpha; Gross Beta	See item (2) in Special Instructions.							

MWSheu 3/12/08

Sample No.	Matrix *	Sample Date	Sample Time										
5DJ6	OTHER SOLID	3/12/08	1253	✓	✓	✓	✓						

CHAIN OF POSSESSION	Sign/Print Names	
nquished By/Removed From: D.R.Everhart 3.12.08	Date/Time 1420	Received By/Stored In: DWSheu DWSHEU 3/12/08 1420
nquished By/Removed From: DWSheu DWSheu	Date/Time 3/12/08 1731	Received By/Stored In: Fridge 1B 3/12/08 1731
nquished By/Removed From: 260/1B	Date/Time 3/18/08 0930	Received By/Stored In: MLK MSTankouch 3/18/08 Date/Time 0930
nquished By/Removed From: WCH MLK MSTankouch	Date/Time 3/18/08 1500	Received By/Stored In: FedEx
nquished By/Removed From: Fed Ex	Date/Time 3.20.08 0940	Received By/Stored In: [illegible] Date/Time 3.20.08 0940
nquished By/Removed From	Date/Time	Received By/Stored In: Date/Time

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000012

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-073-036	Page 1 of 1

Collector: D.W.Shea D. Everhart / SEC	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 15 days (RCF 1 day)		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Other Solid Q	Sampling Location: 118-D-3, anomaly 100D-AN-08-009		SAF No.: RC-073
Ice Chest No.: RCC-07-013	Field Logbook No.: EL-1607-3	COA: R118D32600	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: See OPSC NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	None						
Type of Container	G	nG	G	G/P	G/P	G/P					
No. of Container(s)	1	1	1	1	1	1					
Volume	60mL	60mL	60mL	5g	60g	60g					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	TOC - 415.1	Total Cyanide - 9010; Sulfides - 9030	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	H^3 C^{14} Sr					
Sample No. / Matrix * / Sample Date / Sample Time											
J16DJ7 / OTHER SOLID / 3/12/08 / 1302	✓	✓	✓	✓	✓	✓					

Mushen 3/12/08

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: D.W. Shea Date/Time: 3-12-08 1420	Received By/Stored In: D.W. Shea Mushen Date/Time: 3/12/08 1420
Relinquished By/Removed From: D.W. Shea D.W. Shea Date/Time: 3/12/08 1731	Received By/Stored In: Frider IB Date/Time: 3/12/08 1731
Relinquished By/Removed From: 060/IB Date/Time: 3/18/08 0830	Received By/Stored In: M.L. M. Stankovich Date/Time: 3/18/08 0830
Relinquished By/Removed From: WCH M.L. M. Stankovich Date/Time: 3/18/08 1600	Received By/Stored In: Fed Ex Date/Time:
Relinquished By/Removed From: Fed Ex Date/Time: 3.20.08 0940	Received By/Stored In: [signature] Date/Time: 3.20.08 0940
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:

SPECIAL INSTRUCTIONS

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470 {Mercury}
(2) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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

/CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford
Project/SAF/SOW/Release #: RC-073

Date: 3-20-08

LvLI Batch #: 08031783

Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7910 2400 5253 7904 7224 471[illegible]
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 3.1 °C 2.0 °C		Cooler # AFS-04-004 # RC-07-13
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 MS 4-9-08	☑ No	Sulfide rec'd past hold
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 MS 4-9-08	☑ No	see #12
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC

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