0071847

SAF-RC-031
100-F Burial Grounds Remaining Sites - Soil Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 11/28/06 INITIAL/DATE
Jeanette Duncan	H4-21	KW 11/28/06 INITIAL/DATE

COMMENTS:

SDG: K0608 SAF-RC-031

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 128-F-2 Riverbank Excavation 2

RECEIVED
DEC 18 2006
EDMC

EBERLINE SERVICES

November 9, 2006

RECEIVED NOV 2006

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

Reference: **P.O. #630**
Eberline Services R6-11-016-7894, SDG K0608

Dear Ms. Kessner:

Enclosed is the data report for five solid (soil) samples designated under SAF No. RC-031, received at Eberline Services on October 3, 2006. The samples were 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 K0608 was composed of five solid (soil) samples designated under SAF No. RC-031 with a Project Designation of: 100-F Burial Grounds Remaining Sites-Soil Quick Turn.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on November 8, 2006.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

The gross alpha QC LCS recovery was 69%, less than the minimum requirement of 70%. No other problems were encountered during the course of the analyses.

2.2 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Mel Mannion
Melissa C. Mannion
Senior Program Manager

11/9/6
Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0608

SDG 7894	Client Hanford
Contact Melissa C. Mannion	Contract No. 630
	Case no SDG K0608

SUMMARY DATA SECTION

TABLE OF CONTENTS

About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	8
Lab Control Samples	9
Duplicates	10
Data Sheets	11
Method Summaries	16
Report Guides	19
End of Section	33

Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

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 11/09/06

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 K0608

SDG 7894
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0608

AB AMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
511016-01	J13LX0	100F/128F2/RivrbnkExcav2	SOLID		RC-031	RC-031-072	11/01/06 10:30
511016-02	J13LX1	100F/128F2/RivrbnkExcav2	SOLID		RC-031	RC-031-072	11/01/06 10:35
511016-03	J13LX2	100F/128F2/RivrbnkExcav2	SOLID		RC-031	RC-031-072	11/01/06 10:40
511016-04	J13LX3	100F/128F2/RivrbnkExcav2	SOLID		RC-031	RC-031-072	11/01/06 10:45
511016-05	J13LX4	100F/128F2/RivrbnkExcav2	SOLID		RC-031	RC-031-072	11/01/06 10:50
511016-06	Lab Control Sample		SOLID		RC-031		
511016-07	Method Blank		SOLID		RC-031		
511016-08	Duplicate (R611016-04)	100F/128F2/RivrbnkExcav2	SOLID		RC-031		11/01/06 10:45

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

SDG 7894
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0608

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
1	RC-031-072	J13LX0	SOLID	77.5	644 g		11/03/06	2	R611016-01	7894-001
		J13LX1	SOLID	75.9	836 g		11/03/06	2	R611016-02	7894-002
		J13LX2	SOLID	77.7	852 g		11/03/06	2	R611016-03	7894-003
		J13LX3	SOLID	81.5	717 g		11/03/06	2	R611016-04	7894-004
		J13LX4	SOLID	78.3	716 g		11/03/06	2	R611016-05	7894-005
		Method Blank	SOLID						R611016-07	7894-007
		Lab Control Sample	SOLID						R611016-06	7894-006
		Duplicate (R611016-04)	SOLID	81.5	717 g		11/03/06	2	R611016-08	7894-008

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

SDG 7894
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0608

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6091-045	20.0	5			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6091-045	15.0	5			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6091-045	15.0	5			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

SDG 7894
:ontact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0608

SAMPLE :LLECTED :ECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
.016-01	J13LX0			7894-001	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
.1/01/06	100F/128F2/RivrbnkExcav2		SOLID	7894-001	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
.1/03/06	RC-031-072	RC-031		7894-001	GAM		11/04/06	11/06/06	CSS	Gamma Scan
.016-02	J13LX1			7894-002	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
.1/01/06	100F/128F2/RivrbnkExcav2		SOLID	7894-002	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
.1/03/06	RC-031-072	RC-031		7894-002	GAM		11/04/06	11/06/06	CSS	Gamma Scan
.016-03	J13LX2			7894-003	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
.1/01/06	100F/128F2/RivrbnkExcav2		SOLID	7894-003	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
.1/03/06	RC-031-072	RC-031		7894-003	GAM		11/04/06	11/06/06	CSS	Gamma Scan
.016-04	J13LX3			7894-004	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
.1/01/06	100F/128F2/RivrbnkExcav2		SOLID	7894-004	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
.1/03/06	RC-031-072	RC-031		7894-004	GAM		11/04/06	11/06/06	CSS	Gamma Scan
.016-05	J13LX4			7894-005	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
.1/01/06	100F/128F2/RivrbnkExcav2		SOLID	7894-005	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
.1/03/06	RC-031-072	RC-031		7894-005	GAM		11/04/06	11/06/06	CSS	Gamma Scan
.016-06	Lab Control Sample			7894-006	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
			SOLID	7894-006	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
		RC-031		7894-006	GAM		11/04/06	11/06/06	CSS	Gamma Scan
.016-07	Method Blank			7894-007	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
			SOLID	7894-007	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
		RC-031		7894-007	GAM		11/04/06	11/06/06	CSS	Gamma Scan
.016-08	Duplicate (R611016-04)			7894-008	93A/93		11/07/06	11/07/06	BW	Gross Alpha in Solids
.1/01/06	100F/128F2/RivrbnkExcav2		SOLID	7894-008	93B/93		11/07/06	11/07/06	BW	Gross Beta in Solids
.1/03/06		RC-031		7894-008	GAM		11/04/06	11/06/06	CSS	Gamma Scan

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

SDG 7894
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0608

COUNTS OF TESTS BY SAMPLE TYPE

EST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
A/93	RC-031	Gross Alpha in Solids	900.0_ALPHABETA_GPC	5			1	1	1	8
B/93	RC-031	Gross Beta in Solids	900.0_ALPHABETA_GPC	5			1	1	1	8
M	RC-031	Gamma Scan	GAMMA_GS	5			1	1	1	8
TALS				15			3	3	3	24

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 1.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-007 Method Blank

METHOD BLANK

SDG	7894	Client/Case no	Hanford SDG K0608
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R611016-07	Client sample id	Method Blank
Dept sample id	7894-007	Material/Matrix	SOLID
		SAF No	RC-031

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.701	2.2	5.1	10	U	93A
Gross Beta	12587-47-2	0.622	4.7	7.7	15	U	93B
Potassium 40	13966-00-2	U		4.7		U	GAM
Cobalt 60	10198-40-0	U		0.097	0.050	U	GAM
Cesium 137	10045-97-3	U		0.089	0.10	U	GAM
Radium 226	13982-63-3	U		0.34	0.10	U	GAM
Radium 228	15262-20-1	U		0.61	0.20	U	GAM
Europium 152	14683-23-9	U		0.21	0.10	U	GAM
Europium 154	15585-10-1	U		0.26	0.10	U	GAM
Europium 155	14391-16-3	U		0.22	0.10	U	GAM
Thorium 228	14274-82-9	U		0.12		U	GAM
Thorium 232	TH-232	U		0.61		U	GAM
Uranium 235	15117-96-1	U		0.31		U	GAM
Uranium 238	U-238	U		11		U	GAM
Americium 241	14596-10-2	U		0.28		U	GAM

100-F BurialGrndsRemain.Sites-SoilQT

QC-BLANK #59233

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7894

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0608

Contract No. 630

Lab sample id R611016-06

Dept sample id 7894-006

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-031

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	76.8	12	4.9	10		93A	111	4.4	69	73-127	70-130
Gross Beta	120	8.1	5.6	15		93B	116	4.6	103	74-126	70-130
Cobalt 60	3.01	0.24	0.10	0.050		GAM	3.04	0.12	99	74-126	80-120
Cesium 137	3.39	0.22	0.14	0.10		GAM	3.33	0.13	102	74-126	80-120

100-F BurialGrndsRemain.Sites-SoilQT

QC-LCS #59232

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-008 J13LX3

DUPLICATE

SDG	7894			Client/Case no	Hanford SDG K0608
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R611016-08	Lab sample id	R611016-04	Client sample id	J13LX3
Dept sample id	7894-008	Dept sample id	7894-004	Location/Matrix	100F/128F2/RivrbnkExcav2 SOLID
		Received	11/03/06	Collected/Weight	11/01/06 10:45 717 g
% solids	81.5	% solids	81.5	Custody/SAF No	RC-031-072 RC-031

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	5.12	4.2	6.0	10	U	93A	4.93	3.8	4.9		4	174	0.1
Gross Beta	20.3	4.9	6.3	15		93B	22.4	4.9	6.4		10	58	0.5
Potassium 40	11.2	2.4	1.9			GAM	11.1	2.3	1.9		1	55	0
Cobalt 60	U		0.14	0.050	U	GAM	U		0.16	U	-		0.2
Cesium 137	U		0.14	0.10	U	GAM	U		0.27	U	-		0.8
Radium 226	0.589	0.23	0.21	0.10		GAM	0.423	0.26	0.28		33	108	0.9
Radium 228	U		0.70	0.20	U	GAM	U		0.73	U	-		0.1
Europium 152	U		0.18	0.10	U	GAM	U		0.21	U	-		0.2
Europium 154	U		0.43	0.10	U	GAM	U		0.46	U	-		0.1
Europium 155	U		0.11	0.10	U	GAM	U		0.13	U	-		0.2
Thorium 228	0.416	0.085	0.086			GAM	0.402	0.090	0.093		3	55	0.2
Thorium 232	U		0.70		U	GAM	U		0.73	U	-		0.1
Uranium 235	U		0.17		U	GAM	U		0.19	U	-		0.2
Uranium 238	U		16		U	GAM	U		17	U	-		0.1
Americium 241	U		0.090		U	GAM	U		0.10	U	-		0.1

100-F BurialGrndsRemain.Sites-SoilQT

QC-DUP#4 59234

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-001 J13LX0

DATA SHEET

SDG	7894	Client/Case no	Hanford SDG K0608
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R611016-01	Client sample id	J13LX0
Dept sample id	7894-001	Location/Matrix	100F/128F2/RivrbnkExcav2 SOLID
Received	11/03/06	Collected/Weight	11/01/06 10:30 644 g
% solids	77.5	Custody/SAF No	RC-031-072 RC-031

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	11.2	4.9	5.1	10		93A
Gross Beta	12587-47-2	23.0	4.7	5.9	15		93B
Potassium 40	13966-00-2	11.0	1.3	0.68			GAM
Cobalt 60	10198-40-0	U		0.077	0.050	U	GAM
Cesium 137	10045-97-3	U		0.069	0.10	U	GAM
Radium 226	13982-63-3	0.299	0.12	0.13	0.10		GAM
Radium 228	15262-20-1	0.588	0.24	0.24	0.20		GAM
Europium 152	14683-23-9	U		0.15	0.10	U	GAM
Europium 154	15585-10-1	U		0.15	0.10	U	GAM
Europium 155	14391-16-3	U		0.11	0.10	U	GAM
Thorium 228	14274-82-9	0.566	0.073	0.071			GAM
Thorium 232	TH-232	0.588	0.24	0.24			GAM
Uranium 235	15117-96-1	U		0.23		U	GAM
Uranium 238	U-238	U		7.4		U	GAM
Americium 241	14596-10-2	U		0.072		U	GAM

100-F BurialGrndsRemain.Sites-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-002 J13LX1

DATA SHEET

SDG	7894	Client/Case no	Hanford	SDG K0608	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R611016-02	Client sample id	J13LX1		
Dept sample id	7894-002	Location/Matrix	100F/128F2/RivrbnkExcav2	SOLID	
Received	11/03/06	Collected/Weight	11/01/06 10:35	836 g	
% solids	75.9	Custody/SAF No	RC-031-072	RC-031	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	4.25	3.5	4.9	10	U	93A
Gross Beta	12587-47-2	14.5	6.3	9.5	15		93B
Potassium 40	13966-00-2	12.0	1.4	0.54			GAM
Cobalt 60	10198-40-0	U		0.080	0.050	U	GAM
Cesium 137	10045-97-3	U		0.071	0.10	U	GAM
Radium 226	13982-63-3	0.297	0.13	0.15	0.10		GAM
Radium 228	15262-20-1	0.824	0.28	0.27	0.20		GAM
Europium 152	14683-23-9	U		0.19	0.10	U	GAM
Europium 154	15585-10-1	U		0.26	0.10	U	GAM
Europium 155	14391-16-3	U		0.18	0.10	U	GAM
Thorium 228	14274-82-9	0.623	0.081	0.082			GAM
Thorium 232	TH-232	0.824	0.28	0.27			GAM
Uranium 235	15117-96-1	U		0.28		U	GAM
Uranium 238	U-238	U		9.0		U	GAM
Americium 241	14596-10-2	U		0.29		U	GAM

100-F BurialGrndsRemain.Sites-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-003 J13LX2

DATA SHEET

SDG	7894	Client/Case no	Hanford SDG K0608
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R611016-03	Client sample id	J13LX2
Dept sample id	7894-003	Location/Matrix	100F/128F2/RivrbnkExcav2 SOLID
Received	11/03/06	Collected/Weight	11/01/06 10:40 852 g
% solids	77.7	Custody/SAF No	RC-031-072 RC-031

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Gross Alpha	12587-46-1	13.0	5.1	4.7	10		93A
Gross Beta	12587-47-2	22.6	4.5	5.5	15		93B
Potassium 40	13966-00-2	12.1	4.2	1.0			GAM
Cobalt 60	10198-40-0	U		0.13	0.050	U	GAM
Cesium 137	10045-97-3	U		0.13	0.10	U	GAM
Radium 226	13982-63-3	0.647	0.19	0.16	0.10		GAM
Radium 228	15262-20-1	0.617	0.38	0.42	0.20		GAM
Europium 152	14683-23-9	U		0.30	0.10	U	GAM
Europium 154	15585-10-1	U		0.36	0.10	U	GAM
Europium 155	14391-16-3	U		0.30	0.10	U	GAM
Thorium 228	14274-82-9	0.879	0.17	0.16			GAM
Thorium 232	TH-232	0.617	0.38	0.42			GAM
Uranium 235	15117-96-1	U		0.44		U	GAM
Uranium 238	U-238	U		13		U	GAM
Americium 241	14596-10-2	U		0.43		U	GAM

100-F BurialGrndsRemain.Sites-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-004 J13LX3

DATA SHEET

SDG	7894	Client/Case no	Hanford SDG K0608
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R611016-04	Client sample id	J13LX3
Dept sample id	7894-004	Location/Matrix	100F/128F2/RivrbnkExcav2 SOLID
Received	11/03/06	Collected/Weight	11/01/06 10:45 717 g
% solids	81.5	Custody/SAF No	RC-031-072 RC-031

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	4.93	3.8	4.9	10		93A
Gross Beta	12587-47-2	22.4	4.9	6.4	15		93B
Potassium 40	13966-00-2	11.1	2.3	1.9			GAM
Cobalt 60	10198-40-0	U		0.16	0.050	U	GAM
Cesium 137	10045-97-3	U		0.27	0.10	U	GAM
Radium 226	13982-63-3	0.423	0.26	0.28	0.10		GAM
Radium 228	15262-20-1	U		0.73	0.20	U	GAM
Europium 152	14683-23-9	U		0.21	0.10	U	GAM
Europium 154	15585-10-1	U		0.46	0.10	U	GAM
Europium 155	14391-16-3	U		0.13	0.10	U	GAM
Thorium 228	14274-82-9	0.402	0.090	0.093			GAM
Thorium 232	TH-232	U		0.73		U	GAM
Uranium 235	15117-96-1	U		0.19		U	GAM
Uranium 238	U-238	U		17		U	GAM
Americium 241	14596-10-2	U		0.10		U	GAM

100-F BurialGrndsRemain.Sites-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

7894-005 J13LX4

DATA SHEET

SDG	7894	Client/Case no	Hanford SDG K0608
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R611016-05	Client sample id	J13LX4
Dept sample id	7894-005	Location/Matrix	100F/128F2/RivrbnkExcav2 SOLID
Received	11/03/06	Collected/Weight	11/01/06 10:50 716 g
% solids	78.3	Custody/SAF No	RC-031-072 RC-031

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Gross Alpha	12587-46-1	4.70	4.0	5.6	10	U	93A
Gross Beta	12587-47-2	20.1	4.3	5.4	15		93B
Potassium 40	13966-00-2	11.8	1.2	0.49			GAM
Cobalt 60	10198-40-0	U		0.078	0.050	U	GAM
Cesium 137	10045-97-3	0.187	0.055	0.055	0.10		GAM
Radium 226	13982-63-3	0.390	0.13	0.14	0.10		GAM
Radium 228	15262-20-1	0.746	0.36	0.33	0.20		GAM
Europium 152	14683-23-9	0.099	0.077	0.13	0.10	U	GAM
Europium 154	15585-10-1	U		0.25	0.10	U	GAM
Europium 155	14391-16-3	U		0.14	0.10	U	GAM
Thorium 228	14274-82-9	0.589	0.080	0.078			GAM
Thorium 232	TH-232	0.746	0.36	0.33			GAM
Uranium 235	15117-96-1	U		0.24		U	GAM
Uranium 238	U-238	U		9.7		U	GAM
Americium 241	14596-10-2	U		0.073		U	GAM

100-F BurialGrndsRemain.Sites-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

Test 93A Matrix SOLID
SDG 7894
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K0608

SULTS

PLE ID	RAW TEST	SUP-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
paration batch 6091-045					
1016-01	93		7894-001	J13LX0	11.2
1016-02	93		7894-002	J13LX1	U
1016-03	93		7894-003	J13LX2	13.0
1016-04	93		7894-004	J13LX3	4.93
1016-05	93		7894-005	J13LX4	U
1016-06	93		7894-006	Lab Control Sample	LOW
1016-07	93		7894-007	Method Blank	U
1016-08	93		7894-008	Duplicate (R611016-04)	ok U

inal values and limits from method RDLs (pCi/g) 10
-F BurialGrndsRemain.Sites-SoilQT

THOD PERFORMANCE

PLE ID	RAW TEST	SUP-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
paration batch 6091-045			2σ prep error 20.0 % Reference Lab Notebook #6091, pg. 45													
1016-01	93		J13LX0	5.1	0.100			55		100			6	11/07/06	11/07	GRB-105
1016-02	93		J13LX1	4.9	0.100			50		100			6	11/07/06	11/07	GRB-107
1016-03	93		J13LX2	4.7	0.100			55		100			6	11/07/06	11/07	GRB-109
1016-04	93		J13LX3	4.9	0.100			59		100			6	11/07/06	11/07	GRB-110
1016-05	93		J13LX4	5.6	0.100			56		100			6	11/07/06	11/07	GRB-111
1016-06	93		Lab Control Sample	4.9	0.100			61		100				11/07/06	11/07	GRB-112
1016-07	93		Method Blank	5.1	0.100			62		100				11/07/06	11/07	GRB-114
1016-08	93		Duplicate (R611016-04)	6.0	0.100			58		100			6	11/07/06	11/07	GRB-115
inal values and limits from method				10	0.100			5-250		100			180			

OCEDURES 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 8 SAMPLES
MDA 5.2 ± 0.87
RESIDUE 57 ± 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

Test 93B Matrix SOLID
SDG 7894
ontact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K0608

SULTS

LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
aration batch 6091-045					
.016-01	93		7894-001	J13LX0	23.0
.016-02	93		7894-002	J13LX1	14.5
.016-03	93		7894-003	J13LX2	22.6
.016-04	93		7894-004	J13LX3	22.4
.016-05	93		7894-005	J13LX4	20.1
.016-06	93		7894-006	Lab Control Sample	ok
1016-07	93		7894-007	Method Blank	U
1016-08	93		7894-008	Duplicate (R611016-04)	ok

inal values and limits from method RDLs (pCi/g) 15
-F BurialGrndsRemain.Sites-SoilQT

THOD PERFORMANCE

PLE 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
paration batch 6091-045			2σ prep error 15.0 % Reference Lab Notebook #6091, pg. 45													
1016-01	93		J13LX0	5.9	0.100			55		100			6	11/07/06	11/07	GRB-105
1016-02	93		J13LX1	9.5	0.100			50		100			6	11/07/06	11/07	GRB-107
1016-03	93		J13LX2	5.5	0.100			55		100			6	11/07/06	11/07	GRB-109
1016-04	93		J13LX3	6.4	0.100			59		100			6	11/07/06	11/07	GRB-110
1016-05	93		J13LX4	5.4	0.100			56		100			6	11/07/06	11/07	GRB-111
1016-06	93		Lab Control Sample	5.6	0.100			61		100				11/07/06	11/07	GRB-112
1016-07	93		Method Blank	7.7	0.100			62		100				11/07/06	11/07	GRB-114
1016-08	93		Duplicate (R611016-04)	6.3	0.100			58		100			6	11/07/06	11/07	GRB-115
inal values and limits from method				15	0.100			5-250		100			180			

ROCEDURES 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 6.5 ± 2.8
FOR 8 SAMPLES RESIDUE 57 ± 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

Test GAM Matrix SOLID
SDG 7894
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0608

SULTS

LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
aration batch 6091-045						
.016-01			7894-001	J13LX0	U	U
.016-02			7894-002	J13LX1	U	U
.016-03			7894-003	J13LX2	U	U
.016-04			7894-004	J13LX3	U	U
.016-05			7894-005	J13LX4	U	0.187
.016-06			7894-006	Lab Control Sample	ok	ok
.016-07			7894-007	Method Blank	U	U
.016-08			7894-008	Duplicate (R611016-04)	- U	- U
inal values and limits from method				RDLs (pCi/g)	0.050	0.10

·F BurialGrndsRemain.Sites-SoilQT

THOD PERFORMANCE

LE 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
aration batch 6091-045			2σ prep error 15.0 % Reference Lab Notebook #6091, pg. 45													
1016-01			J13LX0	13	175					127			3	11/04/06	11/04	JR,07,00
1016-02			J13LX1	16	209					127			3	11/04/06	11/04	JR,05,00
1016-03			J13LX2	26	202					115			3	11/04/06	11/04	JR,02,00
1016-04			J13LX3	24	202					101			3	11/04/06	11/04	JR,01,00
1016-05			J13LX4	14	201					101			3	11/04/06	11/04	JR,07,00
1016-06			Lab Control Sample	0.10	175					101				11/04/06	11/04	JR,05,00
1016-07			Method Blank	20	175					115				11/04/06	11/04	JR,08,00
1016-08			Duplicate (R611016-04)	24	202					128			3	11/04/06	11/04	JR,01,00
inal values and limits from method				0.050	175					100			180			

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

AVERAGES ± 2 SD MDA 17 ± 17
FOR 8 SAMPLES YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0608

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

SDG 7894
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0608

DATA SHEET

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0608

DUPLICATE

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0608

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

SDG 7894
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0608

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

SDG 7894
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0608

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/09/06

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector: COFFMAN	Company Contact: R T Coffman — Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8E — Data Turnaround: 3 DAY
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100 F / 128-F-2/ riverbank excavation 2 KD608 (7894)	SAF No.: RC-031	Air Quality ☐
Ice Chest No.: ERC-03-107	Field Logbook No.: EFL-1174-2 — COA: R128F22600	Method of Shipment: FED X	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A070040	Bill of Lading/Air Bill No.: See 03PC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

None

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	P	aG	aG	aG	aG	aG	P	P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time								
J13LX0	SOIL	11/1/06	1030						X	X	F2-10
J13LX1	SOIL		1035						X	X	F2-11
J13LX2	SOIL		1040						X	X	F2-12
J13LX3	SOIL		1045						X	X	F2-13
J13LX4	SOIL	11/1/06	1050						X	X	F2-14

11/1/06

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: RTCoffman/RTCoffman	Date/Time: 1330 11/1/06	Received By/Stored In: RCEE 3C, 3728	Date/Time: 1330 11/1/06
Relinquished By/Removed From: 3728/2C	Date/Time: 11/2/06 0930	Received By/Stored In: MS Stankovich	Date/Time: 0930 11/2/06
Relinquished By/Removed From: MS Stankovich	Date/Time: 11/2/06 1000	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time:	Received By/Stored In:	Date/Time: 11/7/06 9:15
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

NA

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241, Uranium-235, Uranium-238)

Personnel not available to Relinquish samples from 3728
Ref # 2C on 11/2/06

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

BHI-EE-011 (08/29/2005)

EBERLINE SERVICES

RICHMOND, CA LABORATORY
SAMPLE RECEIPT CHECKLIST

11/3/06

Client: W.C. HANFORD City MCHLAND State WA

Date/Time received 11/03/06 9:15 CoC No. PC 031-072

Container I.D. No. EBC-03-07 Requested TAT (Days) 3 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 5 Sample Matrix S
7. Number of containers per sample: 2 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date 11/03/06 Time: 10:00

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031 K0608

RECEIVED NOV 2006

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J13LX0	001	S	06LE0886	11/01/06	11/03/06	11/05/06
J13LX0	001 MS	S	06LE0886	11/01/06	11/03/06	11/05/06
J13LX0	001 MSD	S	06LE0886	11/01/06	11/03/06	11/05/06
J13LX1	002	S	06LE0886	11/01/06	11/03/06	11/05/06
J13LX2	003	S	06LE0886	11/01/06	11/03/06	11/05/06
J13LX3	004	S	06LE0886	11/01/06	11/03/06	11/05/06
J13LX4	005	S	06LE0886	11/01/06	11/03/06	11/05/06

LAB QC:

PBLKSA	MB1	S	06LE0886	N/A	11/03/06	11/05/06
PBLKSA	MB1 BS	S	06LE0886	N/A	11/03/06	11/05/06

11/5/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-031
LVL #: 0611L302
SDG/SAF # K0608 /RC-031

W.O. #: 11343-606-001-9999-00
Date Received: 11-03-2006

PCB

Five (5) soil samples were collected on 11-01-2006.

The samples and their associated QC samples were extracted on 11-03-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 11-05-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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

1. All samples were extracted and analyzed within required holding time.

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

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

4. All surrogate recoveries were within acceptance criteria.

5. The blank spike recoveries were within acceptance criteria.

6. All matrix spike recoveries were within acceptance criteria.

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.

LIONVILLE LABORATORY INC.

9. The pattern for Arochlor 1260 was identified in sample J13LX4. The reported Arochlor was chosen based on the best pattern match and fit. Quantitation was performed using congeners common to the Arochlor to give the best overall total PCB concentration.

10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. 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.

Jain Daniels
for Laboratory Manager
Lionville Laboratory Incorporated

11/9/02
Date

som\r:\group\data\pest\tns hanford\0611-302s.pcb

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

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 11/07/06 08:56

RFW Batch Number: 0611L302 Client: TNU-HANFORD RC-031 Work Order: 11343606001 Page: 1

	Cust ID:	J13LX0	J13LX0	J13LX0	J13LX1	J13LX2	J13LX3
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	90 %	85 %	88 %	88 %	82 %	84 %
	Decachlorobiphenyl	91 %	83 %	89 %	87 %	81 %	82 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		17 U	88 %	94 %	18 U	17 U	16 U
Aroclor-1221		17 U	17 U	17 U	18 U	17 U	16 U
Aroclor-1232		17 U	17 U	17 U	18 U	17 U	16 U
Aroclor-1242		17 U	17 U	17 U	18 U	17 U	16 U
Aroclor-1248		17 U	17 U	17 U	18 U	17 U	16 U
Aroclor-1254		17 U	17 U	17 U	18 U	17 U	16 U
Aroclor-1260		17 U	83 %	90 %	18 U	17 U	16 U

	Cust ID:	J13LX4	PBLKSA	PBLKSA BS
Sample Information	RFW#:	005	06LE0886-MB1	06LE0886-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m xylene	90 %	95 %	94 %
	Decachlorobiphenyl	94 %	86 %	90 %
		fl	fl	fl
Aroclor-1016		18 U	13 U	98 %
Aroclor-1221		18 U	13 U	13 U
Aroclor-1232		18 U	13 U	13 U
Aroclor-1242		18 U	13 U	13 U
Aroclor-1248		18 U	13 U	13 U
Aroclor-1254		18 U	13 U	13 U
Aroclor-1260		42	13 U	87 %

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

11/7/06

000000005

Lionville Laboratory Use Only

06IIL302

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

LVL

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-HANFORD-SAF# RC-031

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: Q Johnson

QC: Spec Del: Std TAT: 3 Days

Date Rec'd: 11/3/06 Date Due: 11/6/06

		A	B		C		D	E		F				
Refrigerator #		2	2		2		2	2		2				
#/Type Container	Liquid / Solid	G	G		G		G	P		G				
Volume	Liquid / Solid	125	125		125		125	120		125				
Preservatives		—	/		—		—	—		—				
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	Pest		TOT TPH	INORG: Metal	CN	PAH			

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA (0625H)	Pest/PCB (0608H)	Herb	Pest (0608H)		TPH (IAHC)	Metal (MET①)	CN	PAH (8310)				
001	T13LX0			Soil	11-6-06	1030		X	X		X		X	X		X				
002	1					1035		X	X		X		X	X		X				
003	2					1040		X	X		X		X	X		X				
004	3					1045		X	X		X		X	X		X				
005	4					1050		X	X		X		X	X		X				

Special Instructions:

MET① - HSL+B, Mo, Si (NoTl)

RUN MATRIX QC

DATE/REVISIONS:

1. 08310 T
2. 0608H
3. 8PCB
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/3/06	1945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"			

ORIGINAL REWRITTEN

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector COFFMAN	Company Contact R T Coffman / Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code 8E / Data Turnaround 3DAY
Project Designation 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location 100 F / 128-F-2/ riverbank excavation 2	SAF No. RC-031	Air Quality ☐
Ice Chest No. ERC-96-014	Field Logbook No. EFL-1174-2 / COA R128F22600	Method of Shipment FED X	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A090011	Bill of Lading/Air Bill No. see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

None Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	P	sG	sG	sG	sG	sG	P	P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time										
J13LX0	SOIL	11/1/06	1030	X	X	X	X	X	X				F2-10
J13LX1	SOIL		1035	X	X	X	X	X	X				F2-11
J13LX2	SOIL		1040	X	X	X	X	X	X				F2-12
J13LX3	SOIL		1045	X	X	X	X	X	X				F2-13
J13LX4	SOIL	11/1/06	1050	X	X	X	X	X	X				F2-14

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From	RTCoffman / RTCoffman	11/1/06 1330
Received By/Stored In	REBERE 2C, 3728	11/1/06 1330
Relinquished By/Removed From	3728/2C	11/2/06 0900
Received By/Stored In	MZK mStankovich	11/2/06 0900
Relinquished By/Removed From	WCU mStankovich	11/2/06 1500
Received By/Stored In	FedEx	
Relinquished By/Removed From	FedEx	11-3-06 0945
Received By/Stored In	[signature]	11-3-06 0945
Relinquished By/Removed From		
Received By/Stored In		
Relinquished By/Removed From		
Received By/Stored In		

SPECIAL INSTRUCTIONS

NA

(1) ICP Metals - 6010 (Client List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on (Americium-241, Uranium-235, Uranium-238)

Personnel not available to relinquish samples from 3728
Ref # 2Con 11/2/06

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=Vapor
X=Other

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-031

Date: 11/3/96

LvLI Batch #: 0611L302

Sample Custodian: Victor Nunez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7990 3068 0056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4	°C	Cooler # ERC-96-004
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.

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J13LX0						
SILVER, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
SILVER, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
SILVER, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
ALUMINUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
ALUMINUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
ALUMINUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
ARSENIC, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
ARSENIC, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
ARSENIC, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
BORON, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
BORON, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
BORON, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
BARIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
BARIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
BARIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
BERYLLIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
BERYLLIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
BERYLLIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
CALCIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
CALCIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
CALCIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
CADMIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
CADMIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
CADMIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
COBALT, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
COBALT, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
COBALT, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
CHROMIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
CHROMIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
CHROMIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
COPPER, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
COPPER, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
COPPER, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
IRON, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
IRON, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
MERCURY, TOTAL	001	S	06C0202	11/01/06	11/06/06	11/07/06
MERCURY, TOTAL	001 REP	S	06C0202	11/01/06	11/06/06	11/07/06
MERCURY, TOTAL	001 MS	S	06C0202	11/01/06	11/06/06	11/07/06
POTASSIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
POTASSIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
POTASSIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
MAGNESIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
MAGNESIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
MAGNESIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
MANGANESE, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
MANGANESE, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
MANGANESE, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
MOLYBDENUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
MOLYBDENUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
MOLYBDENUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
SODIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
SODIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
SODIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
NICKEL, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
NICKEL, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
NICKEL, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
LEAD, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
LEAD, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
LEAD, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
ANTIMONY, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
ANTIMONY, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
ANTIMONY, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
SELENIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
SELENIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
SELENIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
SILICON, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
SILICON, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
SILICON, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
VANADIUM, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06
VANADIUM, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
VANADIUM, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
ZINC, TOTAL	001	S	06L0674	11/01/06	11/06/06	11/06/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	S	06L0674	11/01/06	11/06/06	11/06/06
ZINC, TOTAL	001 MS	S	06L0674	11/01/06	11/06/06	11/06/06
J13LX1						
SILVER, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
ALUMINUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
ARSENIC, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
BORON, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
BARIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
BERYLLIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
CALCIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
CADMIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
COBALT, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
CHROMIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
COPPER, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
IRON, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
MERCURY, TOTAL	002	S	06C0202	11/01/06	11/06/06	11/07/06
POTASSIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
MAGNESIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
MANGANESE, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
MOLYBDENUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
SODIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
NICKEL, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
LEAD, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
ANTIMONY, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
SELENIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
SILICON, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
VANADIUM, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
ZINC, TOTAL	002	S	06L0674	11/01/06	11/06/06	11/06/06
J13LX2						
SILVER, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
ALUMINUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
ARSENIC, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
BORON, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
BARIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
CALCIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
CADMIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
COBALT, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
CHROMIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
COPPER, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
IRON, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
MERCURY, TOTAL	003	S	06C0202	11/01/06	11/06/06	11/07/06
POTASSIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
MAGNESIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
MANGANESE, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
MOLYBDENUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
SODIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
NICKEL, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
LEAD, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
ANTIMONY, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
SELENIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
SILICON, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
VANADIUM, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
ZINC, TOTAL	003	S	06L0674	11/01/06	11/06/06	11/06/06
J13LX3						
SILVER, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
ALUMINUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
ARSENIC, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
BORON, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
BARIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
BERYLLIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
CALCIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
CADMIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
COBALT, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
CHROMIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
COPPER, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
IRON, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
MERCURY, TOTAL	004	S	06C0202	11/01/06	11/06/06	11/07/06
POTASSIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
MAGNESIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
MOLYBDENUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
SODIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
NICKEL, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
LEAD, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
ANTIMONY, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
SELENIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
SILICON, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
VANADIUM, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
ZINC, TOTAL	004	S	06L0674	11/01/06	11/06/06	11/06/06
J13LX4						
SILVER, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
ALUMINUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
ARSENIC, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
BORON, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
BARIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
BERYLLIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
CALCIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
CADMIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
COBALT, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
CHROMIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
COPPER, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
IRON, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
MERCURY, TOTAL	005	S	06C0202	11/01/06	11/06/06	11/07/06
POTASSIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
MAGNESIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
MANGANESE, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
MOLYBDENUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
SODIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
NICKEL, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
LEAD, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
ANTIMONY, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
SELENIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
SILICON, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
VANADIUM, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06
ZINC, TOTAL	005	S	06L0674	11/01/06	11/06/06	11/06/06

AB QC:

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
SILVER, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
ALUMINUM LABORTORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
ALUMINUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
ARSENIC LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
ARSENIC, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
BORON LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
BORON, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
BARIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
BARIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
BERYLLIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
BERYLLIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
CALCIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
CALCIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
CADMIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
CADMIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
COBALT LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
COBALT, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
CHROMIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
CHROMIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
COPPER LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
COPPER, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
IRON LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
IRON, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
MERCURY LABORATORY	LC1 BS	S	06C0202	N/A	11/06/06	11/07/06
MERCURY, TOTAL	MB1	S	06C0202	N/A	11/06/06	11/07/06
POTASSIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
POTASSIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
MAGNESIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
MAGNESIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
MANGANESE LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
MANGANESE, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
MOLYBDENUM LABORATOR	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
MOLYBDENUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
SODIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
NICKEL LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
NICKEL, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
LEAD LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
LEAD, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
ANTIMONY LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
ANTIMONY, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
SELENIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
SELENIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
SILICON LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
SILICON, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
VANADIUM LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
VANADIUM, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06
ZINC LABORATORY	LC1 BS	S	06L0674	N/A	11/06/06	11/06/06
ZINC, TOTAL	MB1	S	06L0674	N/A	11/06/06	11/06/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-031
LVL#: 0611L302
SDG/SAF#: KC608/RC-031

W.O.#: 11343-606-001-9999-00
Date Received: 11-03-06

METALS CASE NARRATIVE

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

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

1. This narrative covers the analyses of 5 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were reported with 3-fold dilutions for ICP metals due to sample matrix. Sample J13LX2 was rerun with a 3-fold dilution for Mercury due to high concentration.

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 PQL).

6. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), 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 with the exception of Silicon at 25.8%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

9. The matrix spike (MS) recoveries for 7 analytes were outside the 75-125% control limits.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 23 pages.

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

Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J13LX0	Aluminum	66,000	99.7
	Calcium	66,000	90.7
	Copper	300	101.2
	Iron	66,000	92.4
	Lead	300	99.6
	Antimony	300	103.0
	Silicon	6,300	101.5

11. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

13. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. 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

11/20/06
Date

jjw/m11-302

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

he following methods are used as reference for the digestion and analysis of samples contained within th
ot#: 0611L302

eaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
luminum	X6010B		__200.7				__99
ntimony	X6010B	__7041[5]	__200.7	__204.2			__99
rsenic	X6010B	__7060A[5]	__200.7	__206.2	__3113B		__99
arium	X6010B		__200.7				__99
eryllium	X6010B		__200.7				__99
ismuth	__6010B[1]		__200.7[1]			__1620	__99
oron	X6010B		__200.7				__99
admium	X6010B	__7131A[5]	__200.7	__213.2			__99
alcium	X6010B		__200.7				__99
hromium	X6010B	__7191[5]	__200.7	__218.2			__SS17
obalt	X6010B		__200.7				__99
opper	X6010B	__7211[5]	__200.7	__220.2			__99
ron	X6010B		__200.7				__99
ead	X6010B	__7421[5]	__200.7	__239.2	__3113B		__99
ithium	__6010B	__7430[4]	__200.7			__1620	__99
agnesium	X6010B		__200.7				__99
anganese	X6010B		__200.7				__99
ercury	__7470A[3]	X7471A[3]	__245.1[2]	__245.5[2]			__99
olybdenum	X6010B		__200.7				__99
ickel	X6010B		__200.7				__99
otassium	X6010B	__7610[4]	__200.7	__258.1[4]			__99
are Earths	__6010B[1]		__200.7[1]			__1620	__99
elenium	X6010B	__7740[5]	__200.7	__270.2	__3113B		__99
ilicon	X6010B[1]		__200.7			__1620	__99
ilica	__6010B		__200.7			__1620	__99
ilver	X6010B	__7761[5]	__200.7	__272.2			__99
odium	X6010B	__7770[4]	__200.7	__273.1[4]			__99
trontium	__6010B		__200.7				__99
hallium	__6010B	__7841[5]	__200.7	__279.2__200.9			__99
in	__6010B		__200.7				__99
itanium	__6010B		__200.7				__99
ranium	__6010B[1]		__200.7[1]			__1620	__99
anadium	X6010B		__200.7				__99
inc	X6010B		__200.7				__99
irconium	__6010B[1]		__200.7[1]			__1620	__99

ther:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 K0608 LVL LOT #: 0611L302

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J13LX0	Silver, Total	0.18 u	MG/KG	0.18	3.0
		Aluminum, Total	6390	MG/KG	7.8	3.0
		Arsenic, Total	7.6	MG/KG	1.1	3.0
		Boron, Total	1.4	MG/KG	0.70	3.0
		Barium, Total	108	MG/KG	0.04	3.0
		Beryllium, Total	0.36	MG/KG	0.04	3.0
		Calcium, Total	9380	MG/KG	4.6	3.0
		Cadmium, Total	0.29	MG/KG	0.11	3.0
		Cobalt, Total	7.1	MG/KG	0.18	3.0
		Chromium, Total	25.5	MG/KG	0.44	3.0
		Copper, Total	60.0	MG/KG	0.26	3.0
		Iron, Total	22200	MG/KG	9.0	3.0
		Mercury, Total	0.44	MG/KG	0.02	1.0
		Potassium, Total	951	MG/KG	7.8	3.0
		Magnesium, Total	4010	MG/KG	1.7	3.0
		Manganese, Total	326	MG/KG	0.15	3.0
		Molybdenum, Total	0.59 u	MG/KG	0.59	3.0
		Sodium, Total	133	MG/KG	0.92	3.0
		Nickel, Total	23.3	MG/KG	0.81	3.0
		Lead, Total	35.1	MG/KG	0.59	3.0
		Antimony, Total	0.92 u	MG/KG	0.92	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Silicon, Total	924	MG/KG	2.4	3.0
		Vanadium, Total	29.5	MG/KG	0.22	3.0
		Zinc, Total	117	MG/KG	0.15	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 K0608

WORK ORDER: 11243-606-001-9999-00

LVL LOT #: 0611L302

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J13LX1	Silver, Total	0.20 u	MG/KG	0.20	3.0
		Aluminum, Total	9150	MG/KG	8.3	3.0
		Arsenic, Total	8.6	MG/KG	1.2	3.0
		Boron, Total	1.6	MG/KG	0.75	3.0
		Barium, Total	121	MG/KG	0.04	3.0
		Beryllium, Total	0.49	MG/KG	0.04	3.0
		Calcium, Total	4470	MG/KG	4.9	3.0
		Cadmium, Total	2.0	MG/KG	0.12	3.0
		Cobalt, Total	8.5	MG/KG	0.20	3.0
		Chromium, Total	104	MG/KG	0.47	3.0
		Copper, Total	322	MG/KG	0.28	3.0
		Iron, Total	26400	MG/KG	9.6	3.0
		Mercury, Total	1.0	MG/KG	0.02	1.0
		Potassium, Total	1060	MG/KG	8.4	3.0
		Magnesium, Total	4900	MG/KG	1.8	3.0
		Manganese, Total	436	MG/KG	0.16	3.0
		Molybdenum, Total	1.7	MG/KG	0.63	3.0
		Sodium, Total	148	MG/KG	0.99	3.0
		Nickel, Total	104	MG/KG	0.87	3.0
		Lead, Total	404	MG/KG	0.63	3.0
		Antimony, Total	2.4	MG/KG	0.99	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	743	MG/KG	2.5	3.0
		Vanadium, Total	33.2	MG/KG	0.24	3.0
		Zinc, Total	399	MG/KG	0.16	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 F0608 LVL LOT #: 0611L202

WORK ORDER: 11343-606-001-1999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J13LX2	Silver, Total	0.19 u	MG/KG	0.19	3.0
		Aluminum, Total	9600	MG/KG	7.9	3.0
		Arsenic, Total	7.4	MG/KG	1.2	3.0
		Boron, Total	1.2	MG/KG	0.71	3.0
		Barium, Total	107	MG/KG	0.04	3.0
		Beryllium, Total	0.61	MG/KG	0.04	3.0
		Calcium, Total	4010	MG/KG	4.7	3.0
		Cadmium, Total	2.1	MG/KG	0.11	3.0
		Cobalt, Total	7.6	MG/KG	0.19	3.0
		Chromium, Total	253	MG/KG	0.45	3.0
		Copper, Total	201	MG/KG	0.26	3.0
		Iron, Total	24200	MG/KG	9.1	3.0
		Mercury, Total	2.2	MG/KG	0.06	3.0
		Potassium, Total	1050	MG/KG	7.9	3.0
		Magnesium, Total	4420	MG/KG	1.7	3.0
		Manganese, Total	538	MG/KG	0.15	3.0
		Molybdenum, Total	0.68	MG/KG	0.60	3.0
		Sodium, Total	138	MG/KG	0.93	3.0
		Nickel, Total	29.8	MG/KG	0.82	3.0
		Lead, Total	293	MG/KG	0.60	3.0
		Antimony, Total	0.93 u	MG/KG	0.93	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Silicon, Total	643	MG/KG	2.4	3.0
		Vanadium, Total	39.5	MG/KG	0.22	3.0
		Zinc, Total	526	MG/KG	0.15	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 N0608

LVL LOT #: 0611L302

WORK ORDER: 11343-606-001-3999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J13LX3	Silver, Total	0.17 u	MG/KG	0.17	3.0
		Aluminum, Total	6500	MG/KG	7.2	3.0
		Arsenic, Total	3.3	MG/KG	1.1	3.0
		Boron, Total	0.64 u	MG/KG	0.64	3.0
		Barium, Total	65.6	MG/KG	0.03	3.0
		Beryllium, Total	0.54	MG/KG	0.03	3.0
		Calcium, Total	3360	MG/KG	4.2	3.0
		Cadmium, Total	0.64	MG/KG	0.10	3.0
		Cobalt, Total	5.7	MG/KG	0.17	3.0
		Chromium, Total	23.4	MG/KG	0.41	3.0
		Copper, Total	64.3	MG/KG	0.24	3.0
		Iron, Total	15900	MG/KG	8.3	3.0
		Mercury, Total	0.12	MG/KG	0.02	1.0
		Potassium, Total	968	MG/KG	7.2	3.0
		Magnesium, Total	4270	MG/KG	1.6	3.0
		Manganese, Total	208	MG/KG	0.14	3.0
		Molybdenum, Total	0.54 u	MG/KG	0.54	3.0
		Sodium, Total	109	MG/KG	0.85	3.0
		Nickel, Total	29.9	MG/KG	0.75	3.0
		Lead, Total	102	MG/KG	0.54	3.0
		Antimony, Total	0.85 u	MG/KG	0.85	3.0
		Selenium, Total	1.5 u	MG/KG	1.5	3.0
		Silicon, Total	950	MG/KG	2.2	3.0
		Vanadium, Total	32.4	MG/KG	0.20	3.0
		Zinc, Total	146	MG/KG	0.14	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 K0608 LVL LOT #: 0611L302

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J13LX4	Silver, Total	0.19 u	MG/KG	0.19	3.0
		Aluminum, Total	6250	MG/KG	7.9	3.0
		Arsenic, Total	3.4	MG/KG	1.2	3.0
		Boron, Total	0.91	MG/KG	0.71	3.0
		Barium, Total	105	MG/KG	0.04	3.0
		Beryllium, Total	0.59	MG/KG	0.04	3.0
		Calcium, Total	3920	MG/KG	4.7	3.0
		Cadmium, Total	0.70	MG/KG	0.11	3.0
		Cobalt, Total	5.5	MG/KG	0.19	3.0
		Chromium, Total	42.2	MG/KG	0.45	3.0
		Copper, Total	40.2	MG/KG	0.26	3.0
		Iron, Total	15700	MG/KG	9.2	3.0
		Mercury, Total	1.6	MG/KG	0.02	1.0
		Potassium, Total	966	MG/KG	8.0	3.0
		Magnesium, Total	3740	MG/KG	1.7	3.0
		Manganese, Total	234	MG/KG	0.15	3.0
		Molybdenum, Total	0.60 u	MG/KG	0.60	3.0
		Sodium, Total	106	MG/KG	0.94	3.0
		Nickel, Total	15.3	MG/KG	0.82	3.0
		Lead, Total	68.9	MG/KG	0.60	3.0
		Antimony, Total	0.94 u	MG/KG	0.94	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Silicon, Total	714	MG/KG	2.4	3.0
		Vanadium, Total	33.7	MG/KG	0.22	3.0
		Zinc, Total	181	MG/KG	0.15	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/08/06

CLIENT: TNUHANFORD RC-031 F0608 LVL LOT #: 0611L302

WORK ORDER: 11343-606-001-1999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0674-MB1	Silver, Total	0.05	MG/KG	0.05	1.0
		Aluminum, Total	2.4	MG/KG	2.1	1.0
		Arsenic, Total	0.31 u	MG/KG	0.31	1.0
		Boron, Total	0.19 u	MG/KG	0.19	1.0
		Barium, Total	0.02	MG/KG	0.01	1.0
		Beryllium, Total	0.01	MG/KG	0.01	1.0
		Calcium, Total	4.2	MG/KG	1.2	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	0.05 u	MG/KG	0.05	1.0
		Chromium, Total	0.12 u	MG/KG	0.12	1.0
		Copper, Total	0.07 u	MG/KG	0.07	1.0
		Iron, Total	2.5	MG/KG	2.4	1.0
		Potassium, Total	2.2	MG/KG	2.1	1.0
		Magnesium, Total	0.72	MG/KG	0.46	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Molybdenum, Total	0.16 u	MG/KG	0.16	1.0
		Sodium, Total	4.9	MG/KG	0.25	1.0
		Nickel, Total	0.22 u	MG/KG	0.22	1.0
		Lead, Total	0.16 u	MG/KG	0.16	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0
		Silicon, Total	3.0	MG/KG	0.64	1.0
		Vanadium, Total	0.06 u	MG/KG	0.06	1.0
		Zinc, Total	0.13	MG/KG	0.04	1.0
BLANK1	06C0202-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 K0608 LVL LOT #: 0611L302

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J13LX0	Silver, Total	6.0	0.18u	6.1	98.4	3.0
		Aluminum, Total	7430	6390	245	424.8*	3.0
		Arsenic, Total	255	7.6	245	100.7	3.0
		Boron, Total	118	1.4	123	95.3	3.0
		Barium, Total	339	108	245	93.9	3.0
		Beryllium, Total	6.5	0.36	6.1	100.6	3.0
		Calcium, Total	11100	9380	3060	56.6	3.0
		Cadmium, Total	6.3	0.29	6.1	98.5	3.0
		Cobalt, Total	66.8	7.1	61.3	97.4	3.0
		Chromium, Total	48.1	25.5	24.5	92.2	3.0
		Copper, Total	119	68.0	30.7	192.2	3.0
		Iron, Total	23600	22200	123	1169 *	3.0
		Mercury, Total	0.59	0.44	0.19	83.1	1.0
		Potassium, Total	3960	951	3060	98.2	3.0
		Magnesium, Total	7230	4010	3060	105.0	3.0
		Manganese, Total	378	326	61.3	85.2*	3.0
		Molybdenum, Total	118	0.59u	123	96.5	3.0
		Sodium, Total	3040	133	3060	94.7	3.0
		Nickel, Total	84.3	23.2	61.3	99.5	3.0
		Lead, Total	203	35.1	61.3	274.2	3.0
		Antimony, Total	34.8	0.92u	61.3	56.8	3.0
		Selenium, Total	246	1.6 u	245	100.1	3.0
		Silicon, Total	777	924	123	-120. *	3.0
		Vanadium, Total	90.5	29.5	61.3	99.5	3.0
		Zinc, Total	181	117	61.3	103.4	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 K0608 LVL LOT #: 0611L302

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J13LX0	Silver, Total	0.18u	0.18u	NC	3.0
		Aluminum, Total	6390	6720	5.0	3.0
		Arsenic, Total	7.6	9.0	16.9	3.0
		Boron, Total	1.4	1.7	19.4	3.0
		Barium, Total	108	116	6.8	3.0
		Beryllium, Total	0.36	0.46	23.2	3.0
		Calcium, Total	9380	9730	3.7	3.0
		Cadmium, Total	0.29	0.29	1.3	3.0
		Cobalt, Total	7.1	6.7	5.8	3.0
		Chromium, Total	25.5	24.0	6.1	3.0
		Copper, Total	60.0	62.0	3.3	3.0
		Iron, Total	22200	20100	9.7	3.0
		Mercury, Total	0.44	0.32	31.4	1.0
		Potassium, Total	951	992	4.2	3.0
		Magnesium, Total	4010	4100	2.1	3.0
		Manganese, Total	326	324	0.77	3.0
		Molybdenum, Total	0.59u	0.59u	NC	3.0
		Sodium, Total	133	141	5.4	3.0
		Nickel, Total	23.3	22.7	2.6	3.0
		Lead, Total	35.1	118	108.2	3.0
		Antimony, Total	0.92u	0.92u	NC	3.0
		Selenium, Total	1.6 u	1.6 u	NC	3.0
		Silicon, Total	924	646	35.4	3.0
		Vanadium, Total	29.5	30.5	3.3	3.0
		Zinc, Total	117	124	5.5	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/08/06

CLIENT: TNUHANFORD RC-031 K0608 LVL LOT #: 0611L302

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	06L0674-LC1	Silver, LCS	48.6	50.0	MG/KG	97.2
		Aluminum, LCS	504	500	MG/KG	100.8
		Arsenic, LCS	979	1000	MG/KG	97.9
		Boron, LCS	485	500	MG/KG	97.1
		Barium, LCS	498	500	MG/KG	99.6
		Beryllium, LCS	25.1	25.0	MG/KG	100.4
		Calcium, LCS	2540	2500	MG/KG	101.6
		Cadmium, LCS	24.9	25.0	MG/KG	99.6
		Cobalt, LCS	243	250	MG/KG	97.3
		Chromium, LCS	50.4	50.0	MG/KG	100.8
		Copper, LCS	126	125	MG/KG	100.5
		Iron, LCS	483	500	MG/KG	96.6
		Potassium, LCS	2360	2500	MG/KG	94.4
		Magnesium, LCS	2420	2500	MG/KG	97.0
		Manganese, LCS	75.9	75.0	MG/KG	101.2
		Molybdenum, LCS	489	500	MG/KG	97.7
		Sodium, LCS	2300	2500	MG/KG	91.9
		Nickel, LCS	201	200	MG/KG	100.6
		Lead, LCS	252	250	MG/KG	100.8
		Antimony, LCS	296	300	MG/KG	98.6
		Selenium, LCS	950	1000	MG/KG	95.0
		Silicon, LCS	129	500	MG/KG	25.8
		Vanadium, LCS	243	250	MG/KG	97.0
		Zinc, LCS	98.7	100	MG/KG	98.7
LCS1	06C0202-LC1	Mercury, LCS	2.9	2.8	MG/KG	103.8

Lionville Laboratory Use Only

06IIL302

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD SAF# RC-031

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: QJohnson

QC: Spec Del: Std TAT: 3Days

Date Rec'd: 11/3/06 Date Due: 11/6/06

		A	B	C	D	E	F		
Refrigerator #		2	2	2	2	2	2		
#/Type Container	Liquid / Solid	G	G	G	G	P	G		
Volume	Liquid / Solid	125	125	125	125	120	125		
Preservatives		—	/	—	—	—	—		
ANALYSES REQUESTED →	ORGANIC: VOA	BNA	Pest/PCB	Herb		TOT TPH	INORG: Metal	CN	PAH

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 0625H	OPCB	0608H	IPHC	METD	8310	ICRL
001	T13LX0			Soil	11-1-06	1030	X	X	X	X	X	X	✓
002	1					1035	X	X	X	X	X	X	✓
003	2					1040	X	X	X	X	X	X	✓
004	3					1045	X	X	X	X	X	X	✓
005	4					1050	X	X	X	X	X	X	✓

Special Instructions:

MET① - HSL+B,Mo,Si (NoTC)

RUN MATRIX QC

DATE/REVISIONS:

11/7/06 1. ICRL added, per. QJ

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/6	1945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
COMPOSITE WASTE			

ORIGINAL REWRITTEN

0000000021

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector: COFFMAN	Company Contact: R T Coffman — Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8E — Data Turnaround: 3DAY
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100 F / 128-F-2/ riverbank excavation 2	SAF No.: RC-031	Air Quality ☐
Ice Chest No.: ERC-96-014	Field Logbook No.: EFL-1174-2 — COA: R128F22600	Method of Shipment: FED X	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A070011	Bill of Lading/Air Bill No.: see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

None Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	P	aG	aG	aG	aG	aG	P	P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta			
J13LX0	SOIL	11/1/06	1030	X	X	X	X	X	X					F2-10
J13LX1	SOIL		1035	X	X	X	X	X	X					F2-11
J13LX2	SOIL		1040	X	X	X	X	X	X					F2-12
J13LX3	SOIL		1045	X	X	X	X	X	X					F2-13
J13LX4	SOIL	11/1/06	1050	X	X	X	X	X	X					F2-14

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RTCoffman/RTCoffman	11/1/06 1330	REEE 2C 3728	11/1/06 1330
3728/2C	11/2/06 0900	MZK mstankovich	11/2/06 0900
mstankovich	11/2/06 1500	FedEx	
	11-3-06 0945		11-3-06 0945

SPECIAL INSTRUCTIONS

NA

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241, Uranium-235, Uranium-238)

Personnel not available to relinquish samples from 3728
Ref # 2Con 11/2/06

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-031

Date: 11/3/96

LvLI Batch #: 0611L302

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7990 3068 0056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4 °C		Cooler # ERC-96-004
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 NOV 2006

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J13LX0						
% SOLIDS	001	S	06L%S134	11/01/06	11/06/06	11/07/06
CHROMIUM VI	001	S	06LVI110	11/01/06	11/09/06	11/09/06
PETROLEUM HYDROCARBO	001	S	06LHC063	11/01/06	11/08/06	11/09/06
PETROLEUM HYDROCARBO	001 REP	S	06LHC063	11/01/06	11/08/06	11/09/06
PETROLEUM HYDROCARBO	001 MS	S	06LHC063	11/01/06	11/08/06	11/09/06
J13LX1						
% SOLIDS	002	S	06L%S134	11/01/06	11/06/06	11/07/06
CHROMIUM VI	002	S	06LVI110	11/01/06	11/09/06	11/09/06
CHROMIUM VI	002 REP	S	06LVI110	11/01/06	11/09/06	11/09/06
CHROMIUM VI	002 MS	S	06LVI110	11/01/06	11/09/06	11/09/06
CHROMIUM VI	002 MSD	S	06LVI110	11/01/06	11/09/06	11/09/06
PETROLEUM HYDROCARBO	002	S	06LHC063	11/01/06	11/08/06	11/09/06
J13LX2						
% SOLIDS	003	S	06L%S134	11/01/06	11/06/06	11/07/06
CHROMIUM VI	003	S	06LVI110	11/01/06	11/09/06	11/09/06
PETROLEUM HYDROCARBO	003	S	06LHC063	11/01/06	11/08/06	11/09/06
J13LX3						
% SOLIDS	004	S	06L%S134	11/01/06	11/06/06	11/07/06
CHROMIUM VI	004	S	06LVI110	11/01/06	11/09/06	11/09/06
PETROLEUM HYDROCARBO	004	S	06LHC063	11/01/06	11/08/06	11/09/06
J13LX4						
% SOLIDS	005	S	06L%S134	11/01/06	11/06/06	11/07/06
% SOLIDS	005 REP	S	06L%S134	11/01/06	11/06/06	11/07/06
CHROMIUM VI	005	S	06LVI110	11/01/06	11/09/06	11/09/06
PETROLEUM HYDROCARBO	005	S	06LHC063	11/01/06	11/08/06	11/09/06

LAB QC:

CHROMIUM VI	MB1	S	06LVI110	N/A	11/09/06	11/09/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	MB1 BS	S	06LVI110	N/A	11/09/06	11/09/06
CHROMIUM VI	MB1 BSD	S	06LVI110	N/A	11/09/06	11/09/06
PETROLEUM HYDROCARBO	MB1	S	06LHC063	N/A	11/08/06	11/09/06
PETROLEUM HYDROCARBO	MB1 BS	S	06LHC063	N/A	11/08/06	11/09/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-031 K0608
LVL#: 0611L302

W.O.#: 11343-606-001-9999-00
Date Received: 11-03-06

INORGANIC NARRATIVE

1. This narrative covers the analyses of 5 soil 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 and holds over 20 additional state accreditations. 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.

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

5. The method blanks were within the method criteria.

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

7. The matrix spike recoveries for Chromium VI and Petroleum Hydrocarbons (PHC) were within the 75-125% control limits.

8. The replicate analyses for Percent Solids and PHC were within the 20% Relative Percent Difference (RPD) control limit however replicate analysis for Chromium VI was outside the control limit that may be attributed to sample inhomogeneity.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

11/15/06
Date

njp\i11-302

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 12 pages.

888888883

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

888888884

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 11/09/06

CLIENT: TNUHANFORD RC-031 X0608 LVL LOT #: 0611L302
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J13LX0	% Solids	77.7		%	0.01	1.0
		Chromium VI	54.7		MG/KG	12.9	50.0
		Petroleum Hydrocarbons	170	u	MG/KG	170	1.0
-002	J13LX1	% Solids	73.0		%	0.01	1.0
		Chromium VI	0.32		MG/KG	0.27	1.0
		Petroleum Hydrocarbons	199		MG/KG	181	1.0
-003	J13LX2	% Solids	77.4		%	0.01	1.0
		Chromium VI	0.26	u	MG/KG	0.26	1.0
		Petroleum Hydrocarbons	172	u	MG/KG	172	1.0
-004	J13LX3	% Solids	83.4		%	0.01	1.0
		Chromium VI	0.24	u	MG/KG	0.24	1.0
		Petroleum Hydrocarbons	159	u	MG/KG	159	1.0
-005	J13LX4	% Solids	75.5		%	0.01	1.0
		Chromium VI	2.6	u	MG/KG	2.6	10.0
		Petroleum Hydrocarbons	197		MG/KG	175	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/09/06

CLIENT: TNUHANFORD RC-031 1:0608 LVL LOT #: 0611L302
WORK ORDER: 11343-606-001-1999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	06LVI110-MB1	Chromium VI	0.20	u	MG/KG	0.20	1.0
BLANK10	06LHC063-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 11/09/06

CLIENT: TNUHANFORD RC-031 X0608 LVL LOT #: 0611L302

WORK ORDER: 11343-606-001-3999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV.	DILUTION FACTOR(SPK)
-001	J13LX0	Petroleum Hydrocarbons	810	21.5	716	110.1	1.0
-002	J13LX1	Soluble Chromium VI	5.7	0.32	5.5	97.8	1.0
		Insoluble Chromium VI	1660	0.32	1530	108.9	100
BLANK10	06LVI110-MB1	Soluble Chromium VI	4.1	0.20u	4.0	101.7	1.0
		Insoluble Chromium VI	1050	0.20u	1020	103.7	100
BLANK10	06LHC063-MB1	Petroleum Hydrocarbons	639	133 u	560	114.0	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 11/09/06

CLIENT: TNUHANFORD RC-031 K0608 LVL LOT #: 0611L302

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J13LX0	Petroleum Hydrocarbons	170 u	170 u	NC	1.0
-002REP	J13LX1	Chromium VI	0.32	0.27u	149.3	1.0
-005REP	J13LX4	% Solids	75.5	76.0	0.65	1.0

REVISION

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

VLI

Lionville Laboratory Use Only: 06/1L302

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD SAF# RC-031
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: AJohnson
QC: Spec Del: Std TAT: 3Day
Date Rec'd: 11/3/06 Date Due: 11/6/06

		A	B		C		D	E		F				
Refrigerator #		2	2		2		2	2		2		use available volume		
#/Type Container	Liquid / Solid	G	G		G		G	P		G				
Volume	Liquid / Solid	125	125		125		125	120		125				
Preservatives		—	/		—		—	—		—				
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	PST		TOT TPH	INORG: Metal	CN	PAH			
Lionville Laboratory Use Only			0625H	OPCB		0608H		IPHC	METO		8310	ICP6		

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	OPCB	0608H	IPHC	METO	8310	ICP6
001	T13LX0			Soil	11-1-06	1030	X	X	X	X	X	X	✓
002	1					1035	X	X	X	X	X	X	✓
003	2					1040	X	X	X	X	X	X	✓
004	3					1045	X	X	X	X	X	X	✓
005	4					1050	X	X	X	X	X	X	✓

Special Instructions:

MET(1) - HSL+B,Mo,Si (NoTC)

RUN MATRIX QC

DATE/REVISIONS:

11/7/06 1. ICP6 added, per OJ
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/3/06	1945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
COMPOSITE WASTE			

ORIGINAL REWRITTEN

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector: COFFMAN	Company Contact: R T Coffman — Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8E — Data Turnaround: 3DAY
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100 F / 128-F-2/ riverbank excavation 2	SAF No.: RC-031	Air Quality ☐
Ice Chest No.: ERC-96-014	Field Logbook No.: EFL-1174-2 — COA: R128F22600	Method of Shipment: FED X	
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A020011	Bill of Lading/Air Bill No.: see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

None Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	P	aG	aG	aG	aG	aG	P	P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time											
J13LX0	SOIL	11/1/06	1030	X	X	X	X	X	X					F2-10
J13LX1	SOIL		1035	X	X	X	X	X	X					F2-11
J13LX2	SOIL		1040	X	X	X	X	X	X					F2-12
J13LX3	SOIL		1045	X	X	X	X	X	X					F2-13
J13LX4	SOIL	11/1/06	1050	X	X	X	X	X	X					F2-14

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: RTCOFFMAN/RTCoffman	Date/Time: 11/1/06 1330	Received By/Stored In: REFER 2C, 3728	Date/Time: 11/1/06 1330
Relinquished By/Removed From: 3728/2C	Date/Time: 11/2/06 0900	Received By/Stored In: MZK mStankovich	Date/Time: 11/2/06 0900
Relinquished By/Removed From: WCH MZK mStankovich	Date/Time: 11/2/06 1500	Received By/Stored In: FED EX	Date/Time:
Relinquished By/Removed From: FED EX	Date/Time: 11-3-06 0945	Received By/Stored In:	Date/Time: 11-3-06 0945
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

NA

(1) ICP Metals - 6010 (Client List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on [Americium-241, Uranium-235, Uranium-238]

Personnel not available to relinquish samples from 3728
Ref # 2Con 11/2/06

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-031

Date: 11/3/96

LvLI Batch #: 0611L302

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7990 3068 0056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4	°C	Cooler # ERC-96-004
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.

888888812

SR-002-B.doc

RECEIVED
NOV 2006

Lionville Laboratory, Inc.
8310 ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031, K0608

DATE RECEIVED: 11/03/06 LVL LOT # :0611L302

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J13LX0	001	S	06LE0888	11/01/06	11/03/06	11/05/06
J13LX1	002	S	06LE0888	11/01/06	11/03/06	11/05/06
J13LX2	003	S	06LE0888	11/01/06	11/03/06	11/05/06
J13LX2	003 MS	S	06LE0888	11/01/06	11/03/06	11/05/06
J13LX2	003 MSD	S	06LE0888	11/01/06	11/03/06	11/05/06
J13LX3	004	S	06LE0888	11/01/06	11/03/06	11/05/06
J13LX4	005	S	06LE0888	11/01/06	11/03/06	11/05/06

LAB QC:

BLK	MB1	S	06LE0888	N/A	11/03/06	11/05/06
BLK	MB1 BS	S	06LE0888	N/A	11/03/06	11/05/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-031
LVL #: 0611L302
SDG/SAF # K0608/RC-031

W.O. #: 11343-606-001-9999-00
Date Received: 11-03-2006

PAH

Five (5) soil samples were collected on 11-01-2006.

The samples and their associated QC samples were extracted on 11-03-2006 and analyzed according to criteria set for the in Lionville Laboratory SOPs based on SW846, 3rd Edition for Polyaromatic Hydrocarbons on 11-05-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8310.

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

1. Samples were extracted and analyzed within required holding time.
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. Five (5) of thirty-two (32) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. The initial calibrations associated with this data set were within acceptance criteria.
7. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
8. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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 1 0 pages.

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

LIONVILLE LABORATORY INC.

9. 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

11/21/06
Date

scm\r:\group\data\peb\tne hanford\0611-302s

000000063

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 066C4AL

Initiator: John Leach
Date: 11/7/06
Client: TNU

Batch: 06IIL302
Samples: 35
Method: SW846/MCAWW/CLP/

Parameter: PAH.
Matrix: SOIL
Prep Batch: 06LE088

1. Reason for SDR

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

b. General Discrepancy

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

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

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

5 compounds are decreased in the matrix spike.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

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

Other Description:
Narrative. The MSD + BS are in control.

4. Project Manager Instructions...signature/date: 11/7/06

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

5. Final Action...signature/date: _____ 11/17/06

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

Other Explanation:

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
__	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	__	__ MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY OF DATA

DATA QUALIFIERS

U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

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

I - Interference.

.I - Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD - Indicates blank spike duplicate.

MS - Indicates matrix spike.

MSD - Indicates matrix spike duplicate.

DL - Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA - Not Applicable.

DF - Dilution Factor.

NR - Not Required.

NS - Not Spiked.

SP - Indicates Spiked Compound.

P - This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C - This flag applies to a compound that has been confirmed by GC/MS.

NPM - No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.
PAH'S by HPLC / Method 8310

Report Date: 11/07/06 09:24

RFW Batch Number: 0611L302 Client: TNU-HANFORD RC-031, 50608 Work Order: 11343606001 Page: 1

000000006

	Cust ID:	J13LX0	J13LX1	J13LX2	J13LX2	J13LX2	J13LX3
Sample Information	RFW#:	001	002	003	003 MS	003 MSD	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Triphenylene		125 %	119 %	96 %	86 %	99 %	104 %
		fl	fl	fl	fl	fl	fl
Naphthalene		42.9 U	180	43.1 U	113 %	105 %	40.0 U
Acenaphthylene		42.9 U	37 J	43.1 U	89 %	86 %	40.0 U
Acenaphthene		61	190	43.1 U	90 %	85 %	40.0 U
Fluorene		110	3.9 J	19	83 %	90 %	18
Phenanthrene		87	81	150	32 * %	103 %	160
Anthracene		4.29 U	4.1 J	30	77 %	85 %	31
Fluoranthrene		12	4.8	190	37 * %	133 %	230
Indeno (1,2,3-cd) pyrene		4.29 U	4.56 U	30	89 %	124 %	83
Pyrene		6.4	20	180	1 * %	110 %	210
Benzo (a) anthracene		10	13	80	53 * %	97 %	90
Chrysene		4.29 U	4.56 U	150	19 * %	67 %	90
Benzo (b) fluoranthrene		19	17	46	81 %	90 %	58
Benzo (k) fluoranthrene		4.29 U	4.56 U	33	75 %	96 %	41
Benzo (a) pyrene		4.29 U	6.3	92	66 %	127 %	110
Dibenzo (a,h) anthracene		16	4.56 U	11	84 %	91 %	14
Benzo (ghi) perylene		4.29 U	20	45	65 %	98 %	53

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

11/7/06

Lionville Laboratory, Inc.
PAH'S by HPLC / Method 8310

Report Date: 11/07/06 09:24

RFW Batch Number: 0611L302 Client: TNU-HANFORD RC-031/KO608 Work Order: 11343606001 Page: 2

000000007

	Cust ID:	J13LX4	BLK	BLK BS
Sample Information	RFW#:	005	06LE0888-MB1	06LE0888-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg

Triphenylene	91	%	100	%	101	%
Naphthalene	44.2	U	33.3	U	120	%
Acenaphthylene	44.2	U	33.3	U	101	%
Acenaphthene	44.2	U	33.3	U	114	%
Fluorene	39		3.33	U	99	%
Phenanthrene	49		3.33	U	100	%
Anthracene	6.4		3.33	U	100	%
Fluoranthrene	120		3.33	U	104	%
Indeno (1,2,3-cd) pyrene	4.42	U	3.33	U	104	%
Pyrene	38		3.33	U	92	%
Benzo (a) anthracene	4.42	U	3.33	U	96	%
Chrysene	20		3.33	U	104	%
Benzo (b) fluoranthrene	34		3.33	U	96	%
Benzo (k) fluoranthrene	12		3.33	U	100	%
Benzo (a) pyrene	33		3.33	U	120	%
Dibenzo (a,h) anthracene	8.4		3.33	U	98	%
Benzo (ghi) perylene	4.42	U	3.33	U	98	%

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

11/07/06

Lionville Laboratory Use Only

06IIL302

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-HANFORD-SAF# RC031

Est. Final Proj. Sampling Date

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: A Johnson

QC: Spec Del: Std TAT: 3 Days

Date Rec'd: 11/3/06 Date Due: 11/6/06

		A	B		C		D	E		F				
Refrigerator #		2	2		2		2	2		2				
#/Type Container	Liquid / Solid	G	G		G		G	P		G				
Volume	Liquid / Solid	125	125		125		125	120		125				
Preservatives		—	—		—		—	—		—				
ANALYSES REQUESTED →		VOA	BNA	Pest/PCB	Herb		TPH	Metal	CN	PAH				
			ORGANIC				TOT	INORG						
Lionville Laboratory Use Only			0625H	DPCB		0608H		IAHC	METO		08310			

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	DPCB		0608H		IAHC	METO		08310
001	T13EX0			Soil	11-1-06	1030	X	X		X		X	X		X
002	1					1035	X	X		X		X	X		X
003	2					1042	X	X		X		X	X		X
004	3					1045	X	X		X		X	X		X
005	4					1050	X	X		X		X	X		X

Special Instructions:

MET(1) - HSL+B, Mo, Si (NoTL)

RUN MATRIX QC

DATE/REVISIONS:

1. 08310T
2. 0608H
3. GPCB
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/3/06	1945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"			

ORIGINAL REWRITTEN

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector: COFFMAN	Company Contact: R T Coffman — Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8E — Data Turnaround: 3DAY
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100 F / 128-F-2/ riverbank excavation 2	SAF No.: RC-031	Air Quality ☐
Ice Chest No.: 15RC-96-014	Field Logbook No.: EFL-1174-2 — COA: R128F22600	Method of Shipment: FED X	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A090011	Bill of Lading/Air Bill No.: see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS
NA

Special Handling and/or Storage
None. Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	P	aG	aG	aG	aG	aG	P	P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See item (2) in Special Instructions	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time										Comments
J13LX0	SOIL	11/1/06	1030	X	X	X	X	X	X				F2-10
J13LX1	SOIL		1035	X	X	X	X	X	X				F2-11
J13LX2	SOIL		1040	X	X	X	X	X	X				F2-12
J13LX3	SOIL		1045	X	X	X	X	X	X				F2-13
J13LX4	SOIL	11/1/06	1050	X	X	X	X	X	X				F2-14

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RTCoffman/RTCoffman	11/1/06 1330	RCCC 2C 3728	11/1/06 1330
3728/2C	11/2/06 0900	MZK mStankovich	11/2/06 0900
WCH mStankovich	11/2/06 1500	FedEx	
FedEx	11-3-06 0945	[signature]	11-3-06 0945

SPECIAL INSTRUCTIONS
NA

(1) ICP Metals - 6010 (Client List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on [Americium-241, Uranium-235, Uranium-238]

Personnel not available to relinquish samples from 3728
Ref # 2Con 11/2/06

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

BHI-EE-011 (08/29/2005)

0000000009

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TRIL HANFORD
Project/SAF/SOW/Release #: RC-031

Date: 11/3/96

LvLI Batch #: 96111302

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7990 3068 0056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4	°C	Cooler # ERC-96-004
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

000000010

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031, K0608

RECEIVED NOV 2006

DATE RECEIVED: 11/03/06 LVL LOT # 0611L302

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J13LX0	001	S	06LE0886	11/01/06	11/03/06	11/06/06
J13LX0	001 MS	S	06LE0886	11/01/06	11/03/06	11/06/06
J13LX0	001 MSD	S	06LE0886	11/01/06	11/03/06	11/06/06
J13LX1	002	S	06LE0886	11/01/06	11/03/06	11/06/06
J13LX2	003	S	06LE0886	11/01/06	11/03/06	11/06/06
J13LX3	004	S	06LE0886	11/01/06	11/03/06	11/06/06
J13LX4	005	S	06LE0886	11/01/06	11/03/06	11/06/06
LAB QC:						
PBLKSA	MB1	S	06LE0886	N/A	11/03/06	11/05/06
PBLKSA	MB1 BS	S	06LE0886	N/A	11/03/06	11/05/06

11/7/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-031
LVL #: 0611L302
SDG/SAF # K0608/RC-031

W.O. #: 11343-606-001-9999-00
Date Received: 11-03-2006

CHLORINATED PESTICIDES

Five (5) soil samples were collected on 11-01-2006.

The samples and their associated QC samples were extracted on 11-03-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 11-05,06-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

1. Samples were extracted and analyzed within required holding time.
2. The samples and their associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All samples required a 4-fold dilution due to high concentration of target analytes. The reporting limits were adjusted to reflect the necessary dilution.
8. The initial calibrations associated with this data set were within acceptance criteria.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 0 pages.

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

LIONVILLE LABORATORY INC.

10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

11. 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

11/21/00
Date

sow\r:\group\data\pest\ms bar ford\0611-302s.pst

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

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.
Pesticide/PCBs by GC, CLP List

Report Date: 11/07/06 09:22

RFW Batch Number: 0611L302 Client: TNU-HANFORD RC-031, K0608 Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J13LX0		J13LX0		J13LX0		J13LX1		J13LX2		J13LX3	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	4.00		4.00		4.00		4.00		4.00		4.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	99	%	106	%	88	%	102	%	90	%	94	%
	Decachlorobiphenyl	103	%	108	%	86	%	103	%	86	%	87	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		1.7	U	103	%	92	%	1.8	U	1.7	U	1.6	U
gamma-BHC (Lindane)		1.7	U	106	%	95	%	1.8	U	1.7	U	1.6	U
Beta-BHC		1.7	U	113	%	101	%	2.0	.I	1.7	U	1.6	U
Heptachlor		1.7	U	115	%	89	%	1.8	U	1.7	U	1.6	U
Delta-BHC		1.2	J	84	%	74	%	1.8	U	1.7	U	1.6	U
Aldrin		0.82	J.I	105	%	80	%	1.8	U	1.7	U	1.6	U
Heptachlor epoxide		1.2	J	107	%	84	%	1.8	U	1.7	U	1.6	U
gamma-Chlordane		1.7	U	103	%	80	%	1.8	U	1.7	U	1.6	U
Endosulfan I		0.94	J	108	%	86	%	1.8	U	1.7	U	1.6	U
alpha-Chlordane		0.52	J.I	104	%	81	%	1.8	U	1.7	U	1.6	U
4,4'-DDE		1.7	U	112	%	86	%	1.8	U	1.7	U	1.6	U
Dieldrin		1.7	U	110	%	84	%	1.8	U	1.7	U	1.6	U
Endrin		1.7	U	114	%	87	%	1.8	U	1.7	U	1.6	U
4,4'-DDD		4.8		102	%	76	%	1.8	U	1.7	U	1.6	U
Endosulfan II		1.7	U	113	%	90	%	1.8	U	1.7	U	1.6	U
4,4'-DDT		18	.I	72	%	43	%	1.8	U	1.7	U	1.6	U
Endrin aldehyde		24	.I	109	%	92	%	1.8	U	1.7	U	1.6	U
Endosulfan sulfate		1.7	U	112	%	90	%	1.8	U	1.7	U	1.6	U
Methoxychlor		12		99	%	62	%	1.8	U	2.6	.I	1.6	U
Endrin ketone		3.3	.I	116	%	94	%	1.8	U	1.7	U	1.6	U
Toxaphene		17	U	17	U	17	U	18	U	17	U	16	U

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

11/7/06

Lionville Laboratory, Inc.
Pesticide/PCBs by GC, CLP List

Report Date: 11/07/06 09:22

RFW Batch Number: 0611L302 Client: TNU-HANFORD RC-031 Work Order: 11343606001 Page: 2

000000006

	Cust ID:	J13LX4		PBLKSA		PBLKSA BS	
Sample Information	RFW#:	005		06LE0886-MB1		06LE0886-MB1	
	Matrix:	SOIL		SOIL		SOIL	
	D.F.:	4.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG	
Surrogate: Tetrachloro-m-xylene		103	%	95	%	93	%
Decachlorobiphenyl		107	%	92	%	91	%
Alpha-BHC		1.8	U	0.33	U	106	%
gamma-BHC (Lindane)		1.8	U	0.33	U	106	%
Beta-BHC		2.5	.I	0.33	U	99	%
Heptachlor		1.8	U	0.33	U	101	%
Delta-BHC		1.8	U	0.33	U	96	%
Aldrin		2.3		0.33	U	108	%
Heptachlor epoxide		1.8	U	0.33	U	105	%
gamma-Chlordane		1.9		0.33	U	108	%
Endosulfan I		1.8	U	0.33	U	108	%
alpha-Chlordane		1.8	U	0.33	U	106	%
4,4'-DDE		4.2		0.33	U	110	%
Dieldrin		1.8	U	0.33	U	110	%
Endrin		1.8	U	0.33	U	105	%
4,4'-DDD		2.5		0.33	U	107	%
Endosulfan II		1.8	U	0.33	U	109	%
4,4'-DDT		1.8	U	0.33	U	95	%
Endrin aldehyde		8.9		0.33	U	101	%
Endosulfan sulfate		1.8	U	0.33	U	105	%
Methoxychlor		3.8	.I	0.33	U	90	%
Endrin ketone		1.8	U	0.33	U	108	%
Toxaphene		18	U	3.3	U	3.3	U

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

11/5/16

Lionville Laboratory Use Only: 06IIL302

Custody Transfer Record/Lab Work Request

Page 1 of 1 See SRC

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-HANFORD-SAF#RC-031
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
Lionville Laboratory Project Manager: A Johnson
QC: Spec Del: Std TAT: 3Day
Date Rec'd: 11/3/06 Date Due: 11/6/06

		A	B	C	D	E	F
Refrigerator #		2	2	2	2	2	2
#/Type Container	Liquid / Solid	G	G	G	G	P	G
Volume	Liquid / Solid	125	125	125	125	120	125
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb	Dioxin	TPH
		INORG: Metal	CN	PAH			
Lionville Laboratory Use Only		0625H	0PCB	0608H		IPHC	METO	08310

MATRIX CODES	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0PCB	0608H	IPHC	METO	08310
S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	001	T-13LXO			Soil	11-1-06	1030	X	X	X	X	X	X
	002	1					1035	X	X	X	X	X	X
	003	2					1040	X	X	X	X	X	X
	004	3					1045	X	X	X	X	X	X
	005	4					1050	X	X	X	X	X	X

Special Instructions:

MET(1) - HSL+B,Mo,Si (NoTC)

RUN MATRIX QC

DATE/REVISIONS:

1. 08310T
2. 0608H
3. GPCB
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/6	1945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
COMPOSITE WASTE			

ORIGINAL REWRITTEN

0000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector: COFFMAN	Company Contact: R T Coffman — Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8E — Data Turnaround: 3DAY
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100 F / 128-F-2/ riverbank excavation 2	SAF No.: RC-031	Air Quality ☐
Ice Chest No.: IFRC-96-014	Field Logbook No.: EFL-1174-2 — COA: R128F22600	Method of Shipment: FED X	
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A090011	Bill of Lading/Air Bill No.: see ODPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

None Cool 4°C

SAMPLE ANALYSIS													
Preservation				None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container				P	aG	aG	aG	aG	aG	P	P		
No. of Container(s)				1	1	1	1	1	1	1	1		
Volume				120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL		
				See Item (1) in Special Instructions	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See Item (2) in Special Instructions	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time										
J13LX0	SOIL	11/1/06	1030	X	X	X	X	X	X				F2-10
J13LX1	SOIL		1035	X	X	X	X	X	X				F2-11
J13LX2	SOIL		1040	X	X	X	X	X	X				F2-12
J13LX3	SOIL		1045	X	X	X	X	X	X				F2-13
J13LX4	SOIL	11/1/06	1050	X	X	X	X	X	X				F2-14

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RTCoffman/RTCoffman	1330 11/1/06	REFEX 2C, 3728	1330 11/1/06
3728/2C	11/2/06 0900	MZK MStankovich	0900 11/2/06
MZK MStankovich	1500 11/2/06	FedEx	
FedEx	11-3-06 0945	[signature]	11-3-06 0945

SPECIAL INSTRUCTIONS

NA

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241, Uranium-235, Uranium-238)

Personnel not available to relinquish samples from 3728
Ref # 2Con 11/2/06

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

BHI-EE-011 (08/29/2005)

0000000008

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector: COFFMAN	Company Contact: R T Coffman — Telephone No.: 528-6409	Project Coordinator: KESSNER, JH	Price Code: 8E — Data Turnaround: 3DAY
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100 F / 128-F-2/ riverbank excavation 2	SAF No.: RC-031	Air Quality ☐
Ice Chest No.: ERC-96-014	Field Logbook No.: EFL-1174-2 — COA: R128F22600	Method of Shipment: FED X	
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A090011	Bill of Lading/Air Bill No.: see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

None Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None			
Type of Container	P	sG	sG	sG	sG	sG	P	P			
No. of Container(s)	1	1	1	1	1	1	1	1			
Volume	120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See item (2) in Special Instructions	Gross Alpha: Gross Beta			
Sample No.	Matrix *	Sample Date	Sample Time								
J13LX0	SOIL	11/1/06	1030	X	X	X	X	X	X		F2-10
J13LX1	SOIL		1035	X	X	X	X	X	X		F2-11
J13LX2	SOIL		1040	X	X	X	X	X	X		F2-12
J13LX3	SOIL		1045	X	X	X	X	X	X		F2-13
J13LX4	SOIL	11/1/06	1050	X	X	X	X	X	X		F2-14

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1330	Received By/Stored In	Date/Time 1330
RTCoffman/RTCoffman	11/1/06	REEE FedEx 3728	11/1/06
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time 0900
3728/2C	11/2/06 0900	MZK MStankovich	11/2/06
Relinquished By/Removed From WCH	Date/Time 1500	Received By/Stored In	Date/Time
MZK MStankovich	11/2/06	FedEx	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	11-3-06 0945	[illegible]	11-3-06 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

NA

(1) ICP Metals - 6010 (Client List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on [Americium-241, Uranium-235, Uranium-238]

Personnel not available to relinquish samples from 3728
Ref # 2Con 11/2/06

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-031

Date: 11/3/96

LvLI Batch #: 0611L302

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7990 3068 0056
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4	°C	Cooler # ERC-96-004
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.

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-031 K0608

RECEIVED NOV 2006

DATE RECEIVED: 11/03/06 LVL LOT # 0611L302

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J13LX0	001	S	06LE0887	11/01/06	11/03/06	11/04/06
J13LX1	002	S	06LE0887	11/01/06	11/03/06	11/04/06
J13LX1	002 MS	S	06LE0887	11/01/06	11/03/06	11/04/06
J13LX1	002 MSD	S	06LE0887	11/01/06	11/03/06	11/04/06
J13LX2	003	S	06LE0887	11/01/06	11/03/06	11/04/06
J13LX3	004	S	06LE0887	11/01/06	11/03/06	11/04/06
J13LX4	005	S	06LE0887	11/01/06	11/03/06	11/04/06
LAB QC:						
SBLKFB	MB1	S	06LE0887	N/A	11/03/06	11/04/06
SBLKFB	MB1 BS	S	06LE0887	N/A	11/03/06	11/04/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-031
LVL #: 0611L302
SDG/SAF # K0608/RC-031

W.O. #: 11343-606-001-9999-00
Date Received: 11-03-2006

SEMIVOLATILE

Five (5) soil samples were collected on 11-01-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 11-03-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 11-04-2006.

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

1. All samples were extracted and analyzed within required holding time.

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

3. The samples and their associated matrix spike samples required a 5-fold dilution and several samples were analyzed using elevated final volume (4mL) due to thick, dark, sticky nature of the sample matrix. A copy of the Sample Extraction Record has been enclosed.

4. All surrogate recoveries were within acceptance criteria.

5. Two (2) of one hundred twenty-six (126) obtainable matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. All blank spike recoveries were within acceptance criteria.

7. Internal standard area criteria were not met for the matrix spike duplicate. The analysis of associated matrix spike sample fulfills the reanalysis requirement.

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

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 part of the analytical data. Therefore, this report should only be reproduced in its entirety of 22 pages.

LIONVILLE LABORATORY INC.

9. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

11/21/06
Date

som\gorup\data\bna\bna-hanford0611-302.doc

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06M5410

Initiator: Robert Carden
Date: 11/7/06
Client: TNU Hanford RC031

Batch: 06L1302
Samples: 025
Method: SW846/MCAWW/CLP/

Parameter: 0625H
Matrix: Soil
Prep Batch: 06LG0889

1. Reason for SDR

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

b. General Discrepancy

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

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

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

4 Methylphenol spike recovery outside QC limits in MS 21% (40-142%) QC in MSD & BS

2. Known or Probable Causes(s) acidic phenolic cmpds are subject to erratic chromatographic behavior especially if the GC system contaminated with high boiling material

3. Discussion and Proposed Action Other Description: Narrate

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

4. Project Manager Instructions...signature/date: 11/13/06

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

5. Final Action...signature/date: 11/20/06 Other Explanation:

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

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
1	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	2	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

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

RFW Batch Number: 0611L302 Client: TNUHANFORD RC-031 K0608 Work Order: 11343606001 Report Date: 11/08/06 09:47 Page: 1a

000000008

	Cust ID:	J13LX0		J13LX1		J13LX1		J13LX1		J13LX2		J13LX3	
Sample Information	RFW#:	001		002		002 MS		002 MSD		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		20.0		20.0		20.0		20.0		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	79	%	77	%	92	%	90	%	70	%	74	%
	2-Fluorobiphenyl	83	%	78	%	99	%	90	%	77	%	80	%
	Terphenyl-d14	100	%	116	%	120	%	126	%	112	%	93	%
	Phenol-d5	85	%	78	%	96	%	97	%	78	%	74	%
	2-Fluorophenol	71	%	68	%	77	%	75	%	68	%	67	%
	2,4,6-Tribromophenol	88	%	67	%	84	%	84	%	60	%	79	%
			fl		fl		fl		fl		fl		fl
Phenol		430	U	9100	U	74	%	88	%	8600	U	400	U
bis(2-Chloroethyl)ether		430	U	9100	U	83	%	88	%	8600	U	400	U
2-Chlorophenol		430	U	9100	U	71	%	85	%	8600	U	400	U
1,3-Dichlorobenzene		430	U	9100	U	70	%	79	%	8600	U	400	U
1,4-Dichlorobenzene		430	U	9100	U	76	%	85	%	8600	U	400	U
1,2-Dichlorobenzene		430	U	9100	U	77	%	88	%	8600	U	400	U
2-Methylphenol		430	U	9100	U	78	%	94	%	8600	U	400	U
2,2'-oxybis(1-Chloropropane)		430	U	9100	U	81	%	94	%	8600	U	400	U
3/4 Methylphenol		430	U	9100	U	73	%	94	%	8600	U	400	U
N-Nitroso-di-n-propylamine		430	U	9100	U	78	%	97	%	8600	U	400	U
Hexachloroethane		430	U	9100	U	75	%	82	%	8600	U	400	U
Nitrobenzene		430	U	9100	U	79	%	91	%	8600	U	400	U
Isophorone		430	U	9100	U	88	%	97	%	8600	U	400	U
2-Nitrophenol		430	U	9100	U	73	%	79	%	8600	U	400	U
2,4-Dimethylphenol		430	U	9100	U	72	%	85	%	8600	U	400	U
bis(2-Chloroethoxy)methane		430	U	9100	U	85	%	95	%	8600	U	400	U
2,4-Dichlorophenol		430	U	9100	U	75	%	89	%	8600	U	400	U
1,2,4-Trichlorobenzene		430	U	9100	U	78	%	88	%	8600	U	400	U
Naphthalene		430	U	9100	U	87	%	101	%	8600	U	400	U
4-Chloroaniline		430	U	9100	U	69	%	84	%	8600	U	400	U
Hexachlorobutadiene		430	U	9100	U	87	%	95	%	8600	U	400	U
4-Chloro-3-methylphenol		430	U	9100	U	73	%	92	%	8600	U	400	U
2-Methylnaphthalene		430	U	9100	U	93	%	114	* %	8600	U	400	U
Hexachlorocyclopentadiene		430	U	9100	U	D	%	34	%	8600	U	400	U
2,4,6-Trichlorophenol		430	U	9100	U	74	%	83	%	8600	U	400	U
2,4,5-Trichlorophenol		1100	U	23000	U	67	%	84	%	22000	U	1000	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0611L302 Client: TNUHANFORD RC-031 K0608 Work Order: 11343606001 Page: 1b

Cust ID:	J13LX0		J13LX1		J13LX1		J13LX1		J13LX2		J13LX3	
RFW#:	001		002		002 MS		002 MSD		003		004	
2-Chloronaphthalene	430	U	9100	U	82	%	91	%	8600	U	400	U
2-Nitroaniline	1100	U	23000	U	79	%	97	%	22000	U	1000	U
Dimethylphthalate	430	U	9100	U	88	%	96	%	8600	U	400	U
Acenaphthylene	430	U	9100	U	87	%	96	%	8600	U	400	U
2,6-Dinitrotoluene	430	U	9100	U	79	%	87	%	8600	U	400	U
3-Nitroaniline	1100	U	23000	U	81	%	102	%	22000	U	1000	U
Acenaphthene	430	U	9100	U	82	%	89	%	8600	U	40	J
2,4-Dinitrophenol	1100	U	23000	U	D	%	21	%	22000	U	1000	U
4-Nitrophenol	1100	U	23000	U	21 *	%	64	%	22000	U	1000	U
Dibenzofuran	430	U	9100	U	85	%	96	%	8600	U	400	U
2,4-Dinitrotoluene	430	U	9100	U	76	%	92	%	8600	U	400	U
Diethylphthalate	430	U	9100	U	89	%	101	%	8600	U	400	U
4-Chlorophenyl-phenylether	430	U	9100	U	80	%	88	%	8600	U	400	U
Fluorene	430	U	9100	U	82	%	93	%	8600	U	24	J
4-Nitroaniline	1100	U	23000	U	59	%	86	%	22000	U	1000	U
4,6-Dinitro-2-methylphenol	1100	U	23000	U	40	%	53	%	22000	U	1000	U
N-Nitrosodiphenylamine (1)	430	U	9100	U	70	%	78	%	8600	U	400	U
4-Bromophenyl-phenylether	430	U	9100	U	73	%	75	%	8600	U	400	U
Hexachlorobenzene	430	U	9100	U	82	%	90	%	8600	U	400	U
Pentachlorophenol	1100	U	23000	U	41	%	61	%	22000	U	1000	U
Phenanthrene	430	U	9100	U	84	%	95	%	8600	U	290	J
Anthracene	430	U	9100	U	84	%	90	%	8600	U	62	J
Carbazole	430	U	9100	U	80	%	90	%	8600	U	25	J
Di-n-butylphthalate	43	J	9100	U	89	%	98	%	8600	U	400	U
Fluoranthene	430	U	9100	U	82	%	89	%	8600	U	350	J
Pyrene	29	J	9100	U	99	%	121	%	8600	U	350	J
Butylbenzylphthalate	430	U	9100	U	109	%	135	%	8600	U	400	U
3,3'-Dichlorobenzidine	430	U	9100	U	63	%	83	%	8600	U	400	U
Benzo(a)anthracene	430	U	9100	U	80	%	92	%	8600	U	150	J
Chrysene	430	U	9100	U	93	%	98	%	8600	U	180	J
bis(2-Ethylhexyl)phthalate	160	JB	9100	U	102	%	126	%	8600	U	78	JB
Di-n-octyl phthalate	430	U	9100	U	67	%	115	%	8600	U	400	U
Benzo(b)fluoranthene	430	U	9100	U	77	%	90	%	8600	U	99	J
Benzo(k)fluoranthene	430	U	9100	U	73	%	88	%	8600	U	100	J
Benzo(a)pyrene	430	U	9100	U	76	%	89	%	8600	U	130	J
Indeno(1,2,3-cd)pyrene	430	U	9100	U	79	%	78	%	8600	U	71	J
Dibenz(a,h)anthracene	430	U	9100	U	68	%	75	%	8600	U	400	U
Benzo(g,h,i)perylene	430	U	9100	U	89	%	85	%	8600	U	74	J

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

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

RFW Batch Number: 0611L302 Client: TNUHANFORD RC-031 K0608 Work Order: 11343606001 Report Date: 11/08/06 09:47 Page: 2a

010000000

	Cust ID:	J13LX4		SBLKFB		SBLKFB BS	
Sample Information	RFW#:	005		06LE0887-MB1		06LE0887-MB1	
	Matrix:	SOIL		SOIL		SOIL	
	D.F.:	20.0		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	79	%	66	%	77	%
	2-Fluorobiphenyl	86	%	66	%	83	%
	Terphenyl-d14	98	%	96	%	92	%
	Phenol-d5	78	%	69	%	78	%
	2-Fluorophenol	67	%	60	%	71	%
	2,4,6-Tribromophenol	64	%	66	%	82	%
Phenol		8800	U	330	U	74	%
bis(2-Chloroethyl)ether		8800	U	330	U	79	%
2-Chlorophenol		8800	U	330	U	73	%
1,3-Dichlorobenzene		8800	U	330	U	70	%
1,4-Dichlorobenzene		8800	U	330	U	70	%
1,2-Dichlorobenzene		8800	U	330	U	74	%
2-Methylphenol		8800	U	330	U	73	%
2,2'-oxybis(1-Chloropropane)		8800	U	330	U	75	%
3/4 Methylphenol		8800	U	330	U	71	%
N-Nitroso-di-n-propylamine		8800	U	330	U	74	%
Hexachloroethane		8800	U	330	U	70	%
Nitrobenzene		8800	U	330	U	73	%
Isophorone		8800	U	330	U	82	%
2-Nitrophenol		8800	U	330	U	76	%
2,4-Dimethylphenol		8800	U	330	U	64	%
bis(2-Chloroethoxy)methane		8800	U	330	U	80	%
2,4-Dichlorophenol		8800	U	330	U	75	%
1,2,4-Trichlorobenzene		8800	U	330	U	72	%
Naphthalene		8800	U	330	U	73	%
4-Chloroaniline		8800	U	330	U	82	%
Hexachlorobutadiene		8800	U	330	U	79	%
4-Chloro-3-methylphenol		8800	U	330	U	75	%
2-Methylnaphthalene		8800	U	330	U	81	%
Hexachlorocyclopentadiene		8800	U	330	U	88	%
2,4,6-Trichlorophenol		8800	U	330	U	74	%
2,4,5-Trichlorophenol		22000	U	830	U	79	%

*= Outside of EPA CLP QC limits.

Cust ID:	J13LX4		SBLKFB		SBLKFB BS	
RFW#:	005		06LE0887-MB1		06LE0887-MB1	
2-Chloronaphthalene	8800	U	330	U	77	%
2-Nitroaniline	22000	U	830	U	85	%
Dimethylphthalate	8800	U	330	U	84	%
Acenaphthylene	8800	U	330	U	84	%
2,6-Dinitrotoluene	8800	U	330	U	84	%
3-Nitroaniline	22000	U	830	U	92	%
Acenaphthene	8800	U	330	U	78	%
2,4-Dinitrophenol	22000	U	830	U	34	%
4-Nitrophenol	22000	U	830	U	72	%
Dibenzofuran	8800	U	330	U	82	%
2,4-Dinitrotoluene	8800	U	330	U	85	%
Diethylphthalate	8800	U	330	U	81	%
4-Chlorophenyl-phenylether	8800	U	330	U	80	%
Fluorene	8800	U	330	U	79	%
4-Nitroaniline	22000	U	830	U	85	%
4,6-Dinitro-2-methylphenol	22000	U	830	U	76	%
N-Nitrosodiphenylamine (1)	8800	U	330	U	70	%
4-Bromophenyl-phenylether	8800	U	330	U	72	%
Hexachlorobenzene	8800	U	330	U	82	%
Pentachlorophenol	22000	U	830	U	80	%
Phenanthrene	8800	U	330	U	82	%
Anthracene	8800	U	330	U	82	%
Carbazole	8800	U	330	U	82	%
Di-n-butylphthalate	8800	U	330	U	84	%
Fluoranthene	8800	U	330	U	85	%
Pyrene	8800	U	330	U	84	%
Butylbenzylphthalate	8800	U	330	U	94	%
3,3'-Dichlorobenzidine	8800	U	330	U	88	%
Benzo(a)anthracene	8800	U	330	U	82	%
Chrysene	8800	U	330	U	83	%
bis(2-Ethylhexyl)phthalate	8800	U	32	J	94	%
Di-n-octyl phthalate	8800	U	330	U	91	%
Benzo(b)fluoranthene	8800	U	330	U	86	%
Benzo(k)fluoranthene	8800	U	330	U	74	%
Benzo(a)pyrene	8800	U	330	U	84	%
Indeno(1,2,3-cd)pyrene	8800	U	330	U	93	%
Dibenz(a,h)anthracene	8800	U	330	U	94	%
Benzo(g,h,i)perylene	8800	U	330	U	94	%

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

0000000011

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J13LX0

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-031 K0608

Matrix: (soil/water) SOIL

Lab Sample ID: 0611L302-001

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

Lab File ID: D110411

Level: (low/med) LOW

Date Received: 11/03/06

% Moisture: 22 decanted: (Y/N)__

Date Extracted: 11/03/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 11/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.653	6000	J
2.	UNKNOWN	19.006	3000	J
3.	UNKNOWN	19.428	1000	J
4.	PAH	20.479	1000	J
5.	UNKNOWN	20.910	1000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J13LX1

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-031 K0608

Matrix: (soil/water) SOIL

Lab Sample ID: 0611L302-002

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

Lab File ID: D110416

Level: (low/med) LOW

Date Received: 11/03/06

% Moisture: 27 decanted: (Y/N)__

Date Extracted: 11/03/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 11/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 20.0

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

Number TICs found: 0

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

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

FORM 1 SV-TIC RFW (v3.3)

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J13LX2

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-031 K0608

Matrix: (soil/water) SOIL

Lab Sample ID: 0611L302-003

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

Lab File ID: D110419

Level: (low/med) LOW

Date Received: 11/03/06

% Moisture: 23 decanted: (Y/N)__

Date Extracted: 11/03/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 11/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 20.0

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

Number TICs found: 0

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

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

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J13LX3

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-031 K0608

Matrix: (soil/water) SOIL

Lab Sample ID: 0611L302-004

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

Lab File ID: D110412

Level: (low/med) LOW

Date Received: 11/03/06

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 11/03/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 11/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	21.021	90	J
2.	UNKNOWN	23.037	80	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J13LX4

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-031 K0608

Matrix: (soil/water) SOIL

Lab Sample ID: 0611L302-005

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

Lab File ID: D110415

Level: (low/med) LOW

Date Received: 11/03/06

% Moisture: 25 decanted: (Y/N)

Date Extracted: 11/03/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 11/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 20.0

GPC Cleanup: (Y/N) N

pH:

Number TICs found: 0

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

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

FORM 1 SV-TIC

RFW (v3.3)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

. CLIENT SAMPLE NO.

SBLKFB

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-031 K0608

Matrix: (soil/water) SOIL

Lab Sample ID: 06LE0887-MB1

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

Lab File ID: D110414

Level: (low/med) LOW

Date Received: 11/03/06

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

Date Extracted: 11/03/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 11/04/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 0

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

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

FORM 1 SV-TIC RFW (v3.3)

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 11/03/06 Extraction Batch No: 06LE0887 Analyst: CK Method: ****

Test: O625 Cleanup Date: Analyst: Client: TNUHANFORD RC-031 K0608

LIMS Report Date: 11/07/06 Solvent: DCM Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0611L302-	TNUHANFORD RC-031 K0608										
001 H	J13LX0		30.0	1.0		1.0		0.5	N	77.66	21.46
002 H	J13LX1		30.0	1.0		4.0		0.5	N	73.02	91.30
002 HS	J13LX1		30.0	1.0	1.0	4.0		0.5	N	73.02	91.30
002 HT	J13LX1		30.0	1.0	1.0	4.0		0.5	N	73.02	91.30
003 H	J13LX2		30.0	1.0		4.0		0.5	N	77.37	86.17
004 H	J13LX3		30.0	1.0		1.0		0.5	N	83.39	19.99
005 H	J13LX4		30.0	1.0		4.0		0.5	N	75.47	88.34
06LE0887-MB1 H	SBLKFB		30.0	1.0		1.0		0.5	N	100.00	16.67
06LE0887-MB1 HS	SBLKFB		30.0	1.0	1.0	1.0		0.5	N	100.00	16.67

Comments:
Surrogate: 500 UL ESU BNA 89915903 @100-150 UG/ML
Spike: 750 UL BNA LCS SPIKE 86951105

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
uplaid & stik	Rec 11/7/06				

Lionville Laboratory, Inc.

887

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 11/03/06 Extraction Batch No: 06LE0887 Analyst: CK Method: **** 5ox3540

Test: 0625 Cleanup Date: Analyst: Client: TNU-HANFORD RC-031

LIMS Report Date: 11/04/06 Solvent: DCM Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0611L302-	TNU-HANFORD RC-031										
001 H	J13LX0		30.0	1.0		1.0		0.5	N	0.07 7.66	16.67
002 H	J13LX1		30.0	1.0		4.0		0.5	N	0.07 3.02	66.67
002 HS	J13LX1		30.0	1.0	1.0	4.0		0.5	N	0.0	66.67
002 HT	J13LX1		30.0	1.0	1.0	4.0		0.5	N	0.0	66.67
003 H	J13LX2		30.0	1.0		4.0		0.5	N	0.07 7.37	66.67
004 H	J13LX3		30.0	1.0		1.0		0.5	N	0.08 3.39	16.67
005 H	J13LX4		30.0	1.0		4.0		0.5	N	0.07 5.47	66.67
06LE0887-MB1 H	SBLKFB		30.0	1.0		1.0		0.5	N	100.00	16.67
06LE0887-MB1 HS	SBLKFB		30.0	1.0	1.0	1.0		0.5	N	100.00	16.67

Comments:
Surrogate: 500 UL ESU BNA 89915903 @100-150 UG/ML
Spike: 750 UL BNA LCS SPIKE 86951105

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	11/4/06 1005	[illegible]	11/4/06 1015	Analysis

000000019

Lionville Laboratory Use Only

06IIL302

Custody Transfer Record/Lab Work Request

Page 1 of 1

See SRC

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD SAF# RC-031

Est. Final Proj. Sampling Date:

Project #: 11343-606-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: A Johnson

QC: Spec Del: Std TAT: 3 Days

Date Rec'd: 11/3/06 Date Due: 11/6/06

		A	B	C	D	E	F
Refrigerator #		2	2	2	2	2	2
#/Type Container	Liquid / Solid	G	G	G	G	P	G
Volume	Liquid / Solid	125	125	125	125	100	125
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED		VOA	BNA	Pest/PCB	Herb	8015	TOT TPH
		ORGANIC					INORG

MATRIX CODES: S - Soil, SE - Sediment, SQ - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		0025H	DPCB		0008H		IPHC	METO		8510		ICRL				
	001	T13LX0			Soil	11-1-06	1030		X	X		X		X	X		X		✓				
	002	1					1035		X	X		X		X	X		X		✓				
	003	2					1040		X	X		X		X	X		X		✓				
	004	3					1045		X	X		X		X	X		X		✓				
	005	4					1050		X	X		X		X	X		X		✓				

Lionville Laboratory Use Only

Special Instructions:

METO - HSL+B, Mo, Si (NoTL)

RUN MATRIX QC

DATE/REVISIONS:

11/7/06 1. ICRL added, per OJ

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/3/06	1945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
COMPOSITE WASTE			

ORIGINAL REWRITTEN

000000020

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-072	Page 1 of 1

Collector COFFMAN	Company Contact R T Coffman Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code 8E Date Turnaround 3DAY Air Quality ☐
Project Designation 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location 100 F / 128-F-2/ riverbank excavation 2	SAF No. RC-031	
Ice Chest No. ERC-96-014	Field Logbook No. EFL-1174-2 COA R128F22600	Method of Shipment FED X	
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A090011	Bill of Lading/Air Bill No. see ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

None Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	P	aG	aG	aG	aG	aG	P	P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	120mL	125mL	125mL	125mL	125mL	125mL	500mL	125mL		
SAMPLE ANALYSIS	See Item (1) in Special Instructions	PCBs - 8082	Semi-VOA - 8270A (TCL)	PAHs - 8310	Pesticides - 8081	TPH (Total) - 418.1	See Item (2) in Special Instructions	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time								
J13LX0	SOIL	11/1/06	1030	X	X	X	X	X	X		F2-10
J13LX1	SOIL		1035	X	X	X	X	X	X		F2-11
J13LX2	SOIL		1040	X	X	X	X	X	X		F2-12
J13LX3	SOIL		1045	X	X	X	X	X	X		F2-13
J13LX4	SOIL	11/1/06	1050	X	X	X	X	X	X		F2-14

RTC

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RTCoffman/RTCoffman	11/1/06 1330	REEE 2C 3728	11/1/06 1330
3728/2C	11/2/06 0900	MZK M Stankovich	11/2/06 0900
MZK M Stankovich	11/2/06 1500	FedEx	
FedEx	11-3-06 0945	[signature]	11-3-06 0945

SPECIAL INSTRUCTIONS

NA

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241, Uranium-235, Uranium-238)

Personnel not available to relinquish samples from 3728
Ref # 2Con 11/2/06

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-031

Date: 11/3/96

LvLI Batch #: 06111L302

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7990 3068 0056
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4	°C	Cooler # ERC-96-004
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