0078912

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

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 6/18/08 Initials/Date
Kathy Wendt	H4-21	KW 6/18/08 Initials/Date

COMMENTS:

SDG K1222 SAF-RC-088

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
OCT 20 2008
EDMC

EBERLINE SERVICES

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

May 30, 2008

RECEIVED
JUN 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-05-126-7818, SDG K1222

Dear Ms. Kessner:

Enclosed is the data report for three solid (other solid) samples designated under SAF No. RC-088 received at Eberline Services on May 13, 2008. 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

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1222 was composed of three solid (other solid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Solids.

Note: the samples were a mixture of oil and dirt, and were therefore treated as solids (other solids). Results are reported in pCi/g.

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 May 29, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

The relative percent difference in the original and duplicate Th-228 results was 26%, greater than the control limit of 23%; the DER was 3.4. No other problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

05/20/08
Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1222

SDG	7818
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1222

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S

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Prepared by

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	05/29/08

SDG 7818
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1222

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 05/29/08

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

SDG 7818
:ontact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1222

ıB ıMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
:05126-01	J16VC0	618-7 BurialGrnd (drums)	SOLID		RC-088	RC-088-019	05/06/08 08:40
:05126-02	J16VC1	618-7 BurialGrnd (drums)	SOLID		RC-088	RC-088-019	05/06/08 10:10
.05126-03	J16VC2	618-7 BurialGrnd (drums)	SOLID		RC-088	RC-088-019	05/06/08 10:35
.05126-04	Lab Control Sample		SOLID		RC-088		
.05126-05	Method Blank		SOLID		RC-088		
05126-06	Duplicate (R805126-02)	618-7 BurialGrnd (drums)	SOLID		RC-088		05/06/08 10:10

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

SDG 7818
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1222

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
3	RC-088-019	J16VC0	SOLID	100.0			05/13/08	7	R805126-01	7818-001
		J16VC1	SOLID	100.0			05/13/08	7	R805126-02	7818-002
		J16VC2	SOLID	100.0			05/13/08	7	R805126-03	7818-003
		Method Blank	SOLID						R805126-05	7818-005
		Lab Control Sample	SOLID						R805126-04	7818-004
		Duplicate (R805126-02)	SOLID	100.0			05/13/08	7	R805126-06	7818-006

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

SDG 7818
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1222

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6148-138	8.0	3			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6148-138	8.0	3			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	6148-138	8.0	3			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6148-138	8.0	3			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6148-138	10.4	3			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-138	20.6	3			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-138	11.0	3			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6148-138	7.0	3			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 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

SDG 7818
ontact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1222

SAMPLE LLECTED ECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
126-01	J16VC0			7818-001	93A/93		05/23/08	05/28/08	BW	Gross Alpha in Solids
5/06/08	618-7 BurialGrnd (drums)		SOLID	7818-001	93B/93		05/23/08	05/28/08	BW	Gross Beta in Solids
5/13/08	RC-088-019	RC-088		7818-001	AM		05/22/08	05/22/08	BW	Americium 241 in Solids
				7818-001	GAM		05/15/08	05/19/08	CSS	Gamma Scan
				7818-001	PU		05/27/08	05/28/08	BW	Plutonium, Isotopic in Solids
				7818-001	SR		05/21/08	05/27/08	BW	Total Strontium in Solids
				7818-001	TH		05/22/08	05/27/08	BW	Thorium, Isotopic in Solids
				7818-001	U		05/21/08	05/21/08	BW	Uranium, Isotopic in Solids
126-02	J16VC1			7818-002	93A/93		05/28/08	05/28/08	BW	Gross Alpha in Solids
5/06/08	618-7 BurialGrnd (drums)		SOLID	7818-002	93B/93		05/28/08	05/28/08	BW	Gross Beta in Solids
5/13/08	RC-088-019	RC-088		7818-002	AM		05/22/08	05/22/08	BW	Americium 241 in Solids
				7818-002	GAM		05/15/08	05/19/08	CSS	Gamma Scan
				7818-002	PU		05/27/08	05/28/08	BW	Plutonium, Isotopic in Solids
				7818-002	SR		05/21/08	05/27/08	BW	Total Strontium in Solids
				7818-002	TH		05/22/08	05/27/08	BW	Thorium, Isotopic in Solids
				7818-002	U		05/21/08	05/21/08	BW	Uranium, Isotopic in Solids
126-03	J16VC2			7818-003	93A/93		05/28/08	05/28/08	BW	Gross Alpha in Solids
5/06/08	618-7 BurialGrnd (drums)		SOLID	7818-003	93B/93		05/28/08	05/28/08	BW	Gross Beta in Solids
5/13/08	RC-088-019	RC-088		7818-003	AM		05/22/08	05/22/08	BW	Americium 241 in Solids
				7818-003	GAM		05/15/08	05/19/08	CSS	Gamma Scan
				7818-003	PU		05/27/08	05/28/08	BW	Plutonium, Isotopic in Solids
				7818-003	SR		05/21/08	05/27/08	BW	Total Strontium in Solids
				7818-003	TH		05/22/08	05/27/08	BW	Thorium, Isotopic in Solids
				7818-003	U		05/21/08	05/21/08	BW	Uranium, Isotopic in Solids
126-04	Lab Control Sample			7818-004	93A/93		05/28/08	05/28/08	BW	Gross Alpha in Solids
			SOLID	7818-004	93B/93		05/28/08	05/28/08	BW	Gross Beta in Solids
		RC-088		7818-004	AM		05/22/08	05/22/08	BW	Americium 241 in Solids
				7818-004	GAM		05/15/08	05/19/08	CSS	Gamma Scan
				7818-004	PU		05/28/08	05/28/08	BW	Plutonium, Isotopic in Solids
				7818-004	SR		05/21/08	05/27/08	BW	Total Strontium in Solids
				7818-004	TH		05/22/08	05/27/08	BW	Thorium, Isotopic in Solids
				7818-004	U		05/21/08	05/21/08	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

SDG 7818
:ontact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1222

SAMPLE ›LLECTED ›ECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
;126-05	Method Blank			7818-005	93A/93		05/28/08	05/28/08	BW	Gross Alpha in Solids
			SOLID	7818-005	93B/93		05/28/08	05/28/08	BW	Gross Beta in Solids
		RC-088		7818-005	AM		05/22/08	05/22/08	BW	Americium 241 in Solids
				7818-005	GAM		05/15/08	05/19/08	CSS	Gamma Scan
				7818-005	PU		05/28/08	05/28/08	BW	Plutonium, Isotopic in Solids
				7818-005	SR		05/21/08	05/27/08	BW	Total Strontium in Solids
				7818-005	TH		05/28/08	05/28/08	BW	Thorium, Isotopic in Solids
				7818-005	U		05/21/08	05/21/08	BW	Uranium, Isotopic in Solids
·126-06	Duplicate (R805126-02)			7818-006	93A/93		05/28/08	05/28/08	BW	Gross Alpha in Solids
·5/06/08	618-7 BurialGrnd (drums)		SOLID	7818-006	93B/93		05/28/08	05/28/08	BW	Gross Beta in Solids
·5/13/08		RC-088		7818-006	AM		05/23/08	05/22/08	BW	Americium 241 in Solids
				7818-006	GAM		05/16/08	05/19/08	CSS	Gamma Scan
				7818-006	PU		05/28/08	05/28/08	BW	Plutonium, Isotopic in Solids
				7818-006	SR		05/21/08	05/27/08	BW	Total Strontium in Solids
				7818-006	TH		05/22/08	05/27/08	BW	Thorium, Isotopic in Solids
				7818-006	U		05/21/08	05/21/08	BW	Uranium, Isotopic in Solids

COUNTS OF TESTS BY SAMPLE TYPE

ST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
A/93	RC-088	Gross Alpha in Solids	900.0_ALPHABETA_GPC	3			1	1	1	6
B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	3			1	1	1	6
	RC-088	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	3			1	1	1	6
M	RC-088	Gamma Scan	GAMMA_GS	3			1	1	1	6
	RC-088	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	3			1	1	1	6
	RC-088	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	3			1	1	1	6
	RC-088	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	3			1	1	1	6
	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	3			1	1	1	6
TALS				24			8	8	8	48

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

7818-005 Method Blank

METHOD BLANK

SDG	7818	Client/Case no	Hanford SDG K1222
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R805126-05	Client sample id	Method Blank
Dept sample id	7818-005	Material/Matrix	SOLID
		SAF No	RC-088

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.127	2.5	5.76	10.0	U	93A
Gross Beta	12587-47-2	0.130	3.7	6.29	15.0	U	93B
Total Strontium	SR-RAD	-0.076	0.12	0.279	1.00	U	SR
Americium 241	14596-10-2	0.141	0.19	0.338	1.00	U	AM
Thorium 228	14274-82-9	-0.037	0.15	0.358	1.00	U	TH
Thorium 230	14269-63-7	-0.074	0.15	0.284	1.00	U	TH
Thorium 232	TH-232	-0.037	0.074	0.284	1.00	U	TH
Uranium 233/234	U-233/234	-0.017	0.035	0.133	1.00	U	U
Uranium 235	15117-96-1	0.021	0.042	0.161	1.00	U	U
Uranium 238	U-238	0	0.035	0.133	1.00	U	U
Plutonium 238	13981-16-3	0.038	0.23	0.420	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.076	0.291	1.00	U	PU
Potassium 40	13966-00-2	U		0.896		U	GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.100	U	GAM
Radium 226	13982-63-3	U		0.074	0.100	U	GAM
Radium 228	15262-20-1	U		0.152	0.200	U	GAM
Europium 152	14683-23-9	U		0.092	0.100	U	GAM
Europium 154	15585-10-1	U		0.105	0.100	U	GAM
Europium 155	14391-16-3	U		0.070	0.100	U	GAM
Thorium 228	14274-82-9	U		0.058		U	GAM
Thorium 232	TH-232	U		0.152		U	GAM
Uranium 235	15117-96-1	U		0.132		U	GAM
Uranium 238	U-238	U		3.76		U	GAM
Americium 241	14596-10-2	U		0.030		U	GAM

618-7 Burial Ground-Other Solid

QC-BLANK #65740

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

7818-004

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7818

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1222

Contract No. S00W235A00

Lab sample id R805126-04

Dept sample id 7818-004

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-088

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	133	19	6.04	10.0		93A	112	4.5	119	55-145	70-130
Gross Beta	113	8.0	5.50	15.0		93B	112	4.5	101	79-121	80-120
Total Strontium	10.8	0.57	0.234	1.00		SR	10.3	0.41	105	81-119	80-120
Americium 241	22.8	2.2	0.340	1.00		AM	22.4	0.90	102	80-120	80-120
Thorium 230	42.6	1.6	0.207	1.00		TH	41.6	1.7	102	85-115	80-120
Uranium 233/234	16.5	1.4	0.693	1.00		U	19.3	0.77	85	84-116	80-120
Uranium 235	14.6	1.4	0.135	1.00		U	15.7	0.63	93	82-118	80-120
Uranium 238	18.0	1.5	0.661	1.00		U	21.0	0.84	86	84-116	80-120
Plutonium 238	26.2	3.0	0.424	1.00		PU	25.8	1.0	102	78-122	80-120
Plutonium 239/240	29.9	3.3	0.293	1.00		PU	29.0	1.2	103	78-122	80-120
Cobalt 60	1.08	0.043	0.028	0.050		GAM	1.10	0.044	98	87-113	80-120
Cesium 137	1.27	0.043	0.034	0.100		GAM	1.22	0.049	104	86-114	80-120

618-7 Burial Ground-Other Solid

QC-LCS #65739

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

7818-006 J16VC1

DUPLICATE

SDG	7818	Client/Case no	Hanford SDG K1222
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R805126-06	Lab sample id	R805126-02
Dept sample id	7818-006	Dept sample id	7818-002
		Received	05/13/08
% solids	100.0	% solids	100.0
Client sample id	J16VC1		
Location/Matrix	618-7 BurialGrnd (drums) SOLID		
Collected	05/06/08 10:10		
Custody/SAF No	RC-088-019 RC-088		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	5.24	4.5	5.89	10.0	U	93A	9.41	5.5	6.18		57	152	1.1
Gross Beta	13.4	3.9	5.35	15.0		93B	13.9	4.3	6.02		4	68	0.2
Total Strontium	-0.005	0.15	0.299	1.00	U	SR	-0.023	0.15	0.302	U	-		0.2
Americium 241	0.026	0.16	0.287	1.00	U	AM	0.160	0.16	0.256	U	-		1.2
Thorium 228	0.371	0.12	0.133	1.00		TH	0.540	0.14	0.121		37	63	1.8
Thorium 230	0.431	0.16	0.218	1.00		TH	0.425	0.15	0.201		1	79	0.1
Thorium 232	0.465	0.12	0.052	1.00		TH	0.406	0.10	0.049		14	56	0.7
Uranium 233/234	0.573	0.23	0.141	1.00		U	0.616	0.22	0.168		7	82	0.3
Uranium 235	0.045	0.045	0.171	1.00	U	U	0.027	0.053	0.204	U	-		0.5
Uranium 238	0.647	0.23	0.141	1.00		U	0.418	0.18	0.168		43	84	1.5
Plutonium 238	0.289	0.25	0.316	1.00	U	PU	0.274	0.087	0.085		5	142	0.1
Plutonium 239/240	0.247	0.17	0.315	1.00	U	PU	0.106	0.048	0.046		80	151	1.6
Potassium 40	7.88	0.43	0.245			GAM	8.09	0.46	0.222		3	19	0.4
Cobalt 60	U		0.024	0.050	U	GAM	U		0.026	U	-		0.1
Cesium 137	U		0.021	0.100	U	GAM	U		0.024	U	-		0.2
Radium 226	0.256	0.038	0.040	0.100		GAM	0.288	0.044	0.043		12	35	1.0
Radium 228	0.469	0.11	0.102	0.200		GAM	0.373	0.11	0.110		23	57	1.2
Europium 152	U		0.050	0.100	U	GAM	U		0.056	U	-		0.2
Europium 154	U		0.074	0.100	U	GAM	U		0.086	U	-		0.2
Europium 155	U		0.051	0.100	U	GAM	U		0.056	U	-		0.1
Thorium 228	0.480	0.040	0.040			GAM	0.369	0.029	0.030		26	23	3.4
Thorium 232	0.469	0.11	0.102			GAM	0.373	0.11	0.110		23	57	1.2
Uranium 235	U		0.084		U	GAM	U		0.091	U	-		0.1
Uranium 238	U		2.63		U	GAM	U		3.22	U	-		0.3
Americium 241	U		0.076		U	GAM	U		0.099	U	-		0.4

618-7 Burial Ground-Other Solid

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

7818-006 J16VC1

DUPLICATE, cont.

SDG	7818			Client/Case no	Hanford SDG K1222
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R805126-06	Lab sample id	R805126-02	Client sample id	J16VC1
Dept sample id	7818-006	Dept sample id	7818-002	Location/Matrix	618-7 BurialGrnd (drums) SOLID
		Received	05/13/08	Collected	05/06/08 10:10
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-019 RC-088

QC-DUP#2 65741

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

7818-001 J16VC0

DATA SHEET

SDG	7818	Client/Case no	Hanford SDG K1222
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R805126-01	Client sample id	J16VC0
Dept sample id	7818-001	Location/Matrix	618-7 BurialGrnd (drums) SOLID
Received	05/13/08	Collected	05/06/08 08:40
% solids	100.0	Custody/SAF No	RC-088-019 RC-088

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	8.77	5.1	5.84	10.0		93A
Gross Beta	12587-47-2	29.1	4.7	5.63	15.0		93B
Total Strontium	SR-RAD	6.93	0.46	0.233	1.00		SR
Americium 241	14596-10-2	0.107	0.16	0.256	1.00	U	AM
Thorium 228	14274-82-9	0.323	0.10	0.104	1.00		TH
Thorium 230	14269-63-7	0.273	0.13	0.204	1.00		TH
Thorium 232	TH-232	0.293	0.080	0.061	1.00		TH
Uranium 233/234	U-233/234	0.170	0.15	0.185	1.00	U	U
Uranium 235	15117-96-1	0.059	0.059	0.224	1.00	U	U
Uranium 238	U-238	0.291	0.15	0.185	1.00		U
Plutonium 238	13981-16-3	0.025	0.044	0.077	1.00	U	PU
Plutonium 239/240	PU-239/240	0.089	0.033	0.027	1.00		PU
Potassium 40	13966-00-2	7.51	0.33	0.151			GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.100	U	GAM
Radium 226	13982-63-3	0.238	0.030	0.030	0.100		GAM
Radium 228	15262-20-1	0.352	0.072	0.070	0.200		GAM
Europium 152	14683-23-9	U		0.045	0.100	U	GAM
Europium 154	15585-10-1	U		0.047	0.100	U	GAM
Europium 155	14391-16-3	U		0.047	0.100	U	GAM
Thorium 228	14274-82-9	0.308	0.026	0.024			GAM
Thorium 232	TH-232	0.352	0.072	0.070			GAM
Uranium 235	15117-96-1	U		0.076		U	GAM
Uranium 238	U-238	U		2.70		U	GAM
Americium 241	14596-10-2	U		0.047		U	GAM

618-7 Burial Ground-Other Solid

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

7818-002 J16VC1

DATA SHEET

SDG	7818	Client/Case no	Hanford	SDG K1222	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805126-02	Client sample id	J16VC1		
Dept sample id	7818-002	Location/Matrix	618-7 BurialGrnd (drums)	SOLID	
Received	05/13/08	Collected	05/06/08 10:10		
% solids	100.0	Custody/SAF No	RC-088-019	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	9.41	5.5	6.18	10.0		93A
Gross Beta	12587-47-2	13.9	4.3	6.02	15.0		93B
Total Strontium	SR-RAD	-0.023	0.15	0.302	1.00	U	SR
Americium 241	14596-10-2	0.160	0.16	0.256	1.00	U	AM
Thorium 228	14274-82-9	0.540	0.14	0.121	1.00		TH
Thorium 230	14269-63-7	0.425	0.15	0.201	1.00		TH
Thorium 232	TH-232	0.406	0.10	0.049	1.00		TH
Uranium 233/234	U-233/234	0.616	0.22	0.168	1.00		U
Uranium 235	15117-96-1	0.027	0.053	0.204	1.00	U	U
Uranium 238	U-238	0.418	0.18	0.168	1.00		U
Plutonium 238	13981-16-3	0.274	0.087	0.085	1.00		PU
Plutonium 239/240	PU-239/240	0.106	0.048	0.046	1.00		PU
Potassium 40	13966-00-2	8.09	0.46	0.222			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.100	U	GAM
Radium 226	13982-63-3	0.288	0.044	0.043	0.100		GAM
Radium 228	15262-20-1	0.373	0.11	0.110	0.200		GAM
Europium 152	14683-23-9	U		0.056	0.100	U	GAM
Europium 154	15585-10-1	U		0.086	0.100	U	GAM
Europium 155	14391-16-3	U		0.056	0.100	U	GAM
Thorium 228	14274-82-9	0.369	0.029	0.030			GAM
Thorium 232	TH-232	0.373	0.11	0.110			GAM
Uranium 235	15117-96-1	U		0.091		U	GAM
Uranium 238	U-238	U		3.22		U	GAM
Americium 241	14596-10-2	U		0.099		U	GAM

618-7 Burial Ground-Other Solid

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

7818-003 J16VC2

DATA SHEET

SDG	7818	Client/Case no	Hanford SDG K1222
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R805126-03	Client sample id	J16VC2
Dept sample id	7818-003	Location/Matrix	618-7 BurialGrnd (drums) SOLID
Received	05/13/08	Collected	05/06/08 10:35
% solids	100.0	Custody/SAF No	RC-088-019 RC-088

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	7.59	4.7	4.92	10.0		93A
Gross Beta	12587-47-2	12.3	5.9	8.87	15.0		93B
Total Strontium	SR-RAD	0.188	0.13	0.230	1.00	U	SR
Americium 241	14596-10-2	0.154	0.15	0.196	1.00	U	AM
Thorium 228	14274-82-9	0.424	0.13	0.162	1.00		TH
Thorium 230	14269-63-7	0.267	0.13	0.208	1.00		TH
Thorium 232	TH-232	0.429	0.10	0.073	1.00		TH
Uranium 233/234	U-233/234	0.878	0.32	0.198	1.00		U
Uranium 235	15117-96-1	0	0.063	0.239	1.00	U	U
Uranium 238	U-238	0.698	0.26	0.198	1.00		U
Plutonium 238	13981-16-3	0.061	0.049	0.075	1.00	U	PU
Plutonium 239/240	PU-239/240	0.286	0.066	0.031	1.00		PU
Potassium 40	13966-00-2	8.52	0.39	0.180			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.017	0.100	U	GAM
Radium 226	13982-63-3	U		0.054	0.100	U	GAM
Radium 228	15262-20-1	0.408	0.086	0.087	0.200		GAM
Europium 152	14683-23-9	U		0.050	0.100	U	GAM
Europium 154	15585-10-1	U		0.063	0.100	U	GAM
Europium 155	14391-16-3	U		0.043	0.100	U	GAM
Thorium 228	14274-82-9	0.357	0.026	0.024			GAM
Thorium 232	TH-232	0.408	0.086	0.087			GAM
Uranium 235	15117-96-1	U		0.100		U	GAM
Uranium 238	U-238	U		5.93		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM

618-7 Burial Ground-Other Solid

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test AM Matrix SOLID
SDG 7818
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium .241
aration batch 6148-138					
126-01			7818-001	J16VC0	U
126-02			7818-002	J16VC1	U
126-03			7818-003	J16VC2	U
126-04			7818-004	Lab Control Sample	ok
126-05			7818-005	Method Blank	U
126-06			7818-006	Duplicate (R805126-02)	- U

nal values and limits from method RDLs (pCi/g) 1.00
7 Burial Ground-Other Solid

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 6148-138			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 138													
126-01			J16VC0	0.256	0.500			65		155			16	05/21/08	05/22	SS-032
126-02			J16VC1	0.256	0.500			56		155			16	05/21/08	05/22	SS-033
126-03			J16VC2	0.196	0.500			70		155			16	05/21/08	05/22	SS-034
126-04			Lab Control Sample	0.340	0.500			60		153				05/21/08	05/22	SS-035
126-05			Method Blank	0.338	0.500			62		154				05/21/08	05/22	SS-036
126-06			Duplicate (R805126-02)	0.287	0.500			67		135			17	05/21/08	05/23	SS-056
nal values and limits from method				1.00	0.500			20-105		100	100		180			

OCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 6 SAMPLES
MDA 0.279 ± 0.110
YIELD 63 ± 10

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test PU Matrix SOLID
SDG 7818
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
aration batch 6148-138								
·126-01			7818-001	J16VC0	U		0.089	
·126-02			7818-002	J16VC1	0.274		0.106	
·126-03			7818-003	J16VC2	U		0.286	
·126-04			7818-004	Lab Control Sample	ok		ok	
126-05			7818-005	Method Blank	U		U	
126-06			7818-006	Duplicate (R805126-02)	ok	U	ok	U
nal values and limits from method				RDLs (pCi/g)	1.00		1.00	
7 Burial Ground-Other Solid								

THOD PERFORMANCE

'LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6148-138			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 138													
126-01			J16VC0	0.077	0.500			72		1214			21	05/23/08	05/27	SS-038
126-02			J16VC1	0.085	0.500			69		888			21	05/23/08	05/27	SS-063
126-03			J16VC2	0.075	0.500			63		888			21	05/23/08	05/27	SS-064
126-04			Lab Control Sample	0.424	0.500			60		110				05/23/08	05/28	SS-028
126-05			Method Blank	0.420	0.500			58		109				05/23/08	05/28	SS-038
126-06			Duplicate (R805126-02)	0.316	0.500			69		109			22	05/23/08	05/28	SS-040
nal values and limits from method				1.00	0.500			20-105		100	100		180			

OCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 6 SAMPLES
MDA 0.233 ± 0.346
YIELD 65 ± 11

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test TH Matrix SOLID
SDG 7818
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
aration batch 6148-138					
126-01			7818-001	J16VC0	0.273
126-02			7818-002	J16VC1	0.425
126-03			7818-003	J16VC2	0.267
126-04			7818-004	Lab Control Sample	ok
126-05			7818-005	Method Blank	U
126-06			7818-006	Duplicate (R805126-02)	ok

nal values and limits from method RDLs (pCi/g) 1.00
7 Burial Ground-Other Solid

THOD PERFORMANCE

'LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6148-138			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 138													
126-01			J16VC0	0.204	0.250			98		951			16	05/22/08	05/22	SS-033
126-02			J16VC1	0.201	0.250			92		951			16	05/22/08	05/22	SS-034
126-03			J16VC2	0.208	0.250			96		966			16	05/22/08	05/22	SS-035
126-04			Lab Control Sample	0.207	0.250			92		967				05/22/08	05/22	SS-037
126-05			Method Blank	0.358	0.250			98		170				05/22/08	05/28	SS-040
126-06			Duplicate (R805126-02)	0.218	0.250			95		967			16	05/22/08	05/22	SS-040
nal values and limits from method				1.00	0.250			20-105		150			180			

OCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-061	Determination of Moisture Content in Solid Samples rev 0
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD MDA 0.233 ± 0.123
FOR 6 SAMPLES YIELD 95 ± 5

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test U Matrix SOLID
SDG 7818
'ontact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
aration batch 6148-138											
126-01			7818-001	J16VC0	U	U	0.291	58	60	20	23
126-02			7818-002	J16VC1	0.616	U	0.418	147	82	6	13
126-03			7818-003	J16VC2	0.878	U	0.698	126	66	0	9
126-04			7818-004	Lab Control Sample	ok	ok	ok				
126-05			7818-005	Method Blank	U	U	U				
126-06			7818-006	Duplicate (R805126-02)	ok	- U	ok	89	47	7	7
nal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
7 Burial Ground-Other Solid								Averages 105		8	

THOD PERFORMANCE

LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6148-138 2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 138																
126-01			J16VC0	0.224	0.500			89		127			15	05/21/08	05/21	SS-031
126-02			J16VC1	0.204	0.500			82		127			15	05/21/08	05/21	SS-033
126-03			J16VC2	0.239	0.500			84		127			15	05/21/08	05/21	SS-034
126-04			Lab Control Sample	0.693	0.500			104		155				05/21/08	05/21	SS-035
126-05			Method Blank	0.161	0.500			84		155				05/21/08	05/21	SS-036
126-06			Duplicate (R805126-02)	0.171	0.500			84		155			15	05/21/08	05/21	SS-038
nal values and limits from method				1.00	0.500			20-105		100	100		180			

OCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 6 SAMPLES
MDA 0.282 ± 0.407
YIELD 88 ± 17

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test SR Matrix SOLID
SDG 7818
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

›LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
›aration batch 6148-138					
:126-01			7818-001	J16VC0	6.93
:126-02			7818-002	J16VC1	U
·126-03			7818-003	J16VC2	U
·126-04			7818-004	Lab Control Sample	ok
·126-05			7818-005	Method Blank	U
·126-06			7818-006	Duplicate (R805126-02)	- U

.nal values and limits from method RDLs (pCi/g) 1.00
7 Burial Ground-Other Solid

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 6148-138			2σ prep error 10.4 % Reference Lab Notebook #6148, pg. 138													
126-01			J16VC0	0.233	1.00			92		109			15	05/21/08	05/21	GRB-223
126-02			J16VC1	0.302	1.00			96		100			15	05/21/08	05/21	GRB-204
126-03			J16VC2	0.230	1.00			94		109			15	05/21/08	05/21	GRB-224
126-04			Lab Control Sample	0.234	1.00			93		109				05/21/08	05/21	GRB-222
126-05			Method Blank	0.279	1.00			95		100				05/21/08	05/21	GRB-203
126-06			Duplicate (R805126-02)	0.299	1.00			95		100			15	05/21/08	05/21	GRB-204
nal values and limits from method				1.00	1.00			30-105		100			180			

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

AVERAGES ± 2 SD FOR 6 SAMPLES
MDA 0.263 ± 0.069
YIELD 94 ± 3

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test 93A Matrix SOLID
SDG 7818
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
aration batch 6148-138						
126-01	93		7818-001	J16VC0	8.77	
126-02	93		7818-002	J16VC1	9.41	
126-03	93		7818-003	J16VC2	7.59	
126-04	93		7818-004	Lab Control Sample	ok	
126-05	93		7818-005	Method Blank	U	
126-06	93		7818-006	Duplicate (R805126-02)	ok	U

.nal values and limits from method RDLs (pCi/g) 10.0
·7 Burial Ground-Other Solid

THOD PERFORMANCE

'LE 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
aration batch 6148-138			2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 138													
126-01	93		J16VC0	5.84	0.100			36		100			17	05/21/08	05/23	GRB-211
126-02	93		J16VC1	6.18	0.100			44		100			22	05/21/08	05/28	GRB-105
126-03	93		J16VC2	4.92	0.100			44		100			22	05/21/08	05/28	GRB-107
126-04	93		Lab Control Sample	6.04	0.100			60		100				05/21/08	05/28	GRB-109
126-05	93		Method Blank	5.76	0.100			59		100				05/21/08	05/28	GRB-110
126-06	93		Duplicate (R805126-02)	5.89	0.100			44		100			22	05/21/08	05/28	GRB-111
.nal values and limits from method				10.0	0.100			5-250		100			180			

:OCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD MDA 5.77 ± 0.887
FOR 6 SAMPLES RESIDUE 48 ± 19

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test 93B Matrix SOLID
SDG 7818
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
aration batch 6148-138					
126-01	93		7818-001	J16VC0	29.1
126-02	93		7818-002	J16VC1	13.9
126-03	93		7818-003	J16VC2	12.3
126-04	93		7818-004	Lab Control Sample	ok
126-05	93		7818-005	Method Blank	U
126-06	93		7818-006	Duplicate (R805126-02)	ok

nal values and limits from method RDLs (pCi/g) 15.0
7 Burial Ground-Other Solid

THOD PERFORMANCE

'LE 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
aration batch 6148-138			2σ prep error 11.0 %. Reference Lab Notebook #6148, pg. 138													
126-01	93		J16VC0	5.63	0.100			36		100			17	05/21/08	05/23	GRB-211
126-02	93		J16VC1	6.02	0.100			44		100			22	05/21/08	05/28	GRB-105
126-03	93		J16VC2	8.87	0.100			44		100			22	05/21/08	05/28	GRB-107
126-04	93		Lab Control Sample	5.50	0.100			60		100				05/21/08	05/28	GRB-109
126-05	93		Method Blank	6.29	0.100			59		100				05/21/08	05/28	GRB-110
126-06	93		Duplicate (R805126-02)	5.35	0.100			44		100			22	05/21/08	05/28	GRB-111
nal values and limits from method				15.0	0.100			5-250		100			180			

OCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 6 SAMPLES
MDA 6.28 ± 2.63
RESIDUE 48 ± 19

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1222

Test GAM Matrix SOLID
SDG 7818
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1222

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
aration batch 6148-138								
126-01			7818-001	J16VC0	U		U	
126-02			7818-002	J16VC1	U		U	
126-03			7818-003	J16VC2	U		U	
126-04			7818-004	Lab Control Sample	ok		ok	
126-05			7818-005	Method Blank	U		U	
126-06			7818-006	Duplicate (R805126-02)	-	U	-	U
nal values and limits from method				RDLs (pCi/g)	0.050		0.100	
7 Burial Ground-Other Solid								

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 6148-138			2σ prep error 7.0 %	Reference Lab Notebook #6148, pg. 138												
126-01			J16VC0	4.37	239					809			9	05/14/08	05/15	JR,02,00
126-02			J16VC1	5.07	231					809			9	05/14/08	05/15	JR,05,00
126-03			J16VC2	4.12	244					809			9	05/14/08	05/15	JR,07,00
126-04			Lab Control Sample	0.028	231					791				05/14/08	05/15	JR,08,00
126-05			Method Blank	8.76	231					752				05/14/08	05/15	JR,06,00
126-06			Duplicate (R805126-02)	4.71	231					971			10	05/14/08	05/16	JR,05,00
nal values and limits from method				0.050	231					100			180			

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

AVERAGES ± 2 SD FOR 6 SAMPLES
MDA 4.51 ± 5.56
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/29/08

SDG 7818
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1222

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1222

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

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SDG 7818
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Client Hanford
Contract No. S00W235A00
Case no SDG K1222

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

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GUIDE, cont.

Client Hanford
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DATA SHEET

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

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

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

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Version 3.06
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REPORT GUIDE

Client Hanford
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Case no SDG_K1222

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

DUPLICATE

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

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

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

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

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

SDG 7818
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1222

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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SDG 7818
Contact Melissa C. Mannion

GUIDE, cont.

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MATRIX SPIKE

for the recovery.

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

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

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METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-019	Page 1 of 1

Collector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 9G	Data Turnaround: 15 Days		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums) K1222 (7818)		SAF No.: RC-088
Ice Chest No.: ERC-02-003	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080256		Bill of Lading/Air Bill No.: see ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

SAMPLE ANALYSIS

Other solid. mm 5/13/8

Preservation				Cool 4C	Cool 4C	None	None	None				
Type of Container				aG	aG	P	P	P			---	
No. of Container(s)				1	0	0	0	1				
Volume				250mL	125mL	125mL	60mL	500mL				
				Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions	Ignitability - 1010	See item (2) in Special Instructions		TIED TO		B-12 Box #
Sample No.	Matrix *	Sample Date	Sample Time		RTC	5/6/08						
J16VC0	~~OTHER LIQUID~~	5/6/08	0840					X		J16VD0	OILY SOIL	0224
J16VC1	~~OTHER LIQUID~~	5/6/08	1010					X		J16VD1	OILY SOIL	0225
J16VC2	~~OTHER LIQUID~~	5/6/08	1035					X		J16VD2	OILY SOIL	0226

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: E. Harries / E. Harries	Received By/Stored In: RT Coffman / RT Coffman	1245 5/6/08
Relinquished By/Removed From: RT Coffman / RT Coffman	Received By/Stored In: REFEC #1A, 1060 BLDG	1430 5/6/08
Relinquished By/Removed From: 1060/1A	Received By/Stored In: MS Ankovich	1045 MAY 12 2008
Relinquished By/Removed From: MS Ankovich, ach	Received By/Stored In: FedEx	1045 MAY 12 2008
Relinquished By/Removed From: FED EX	Received By/Stored In:	Date/Time
Relinquished By/Removed From:	Received By/Stored In:	05/13/08 13:30

SPECIAL INSTRUCTIONS

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

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

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

Matrix *

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

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

WCH-EE-011

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

7818 K1222

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 05/13/08 13:35 CoC No. RC-088-019

Container I.D. No. ERC-02.003 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 3 Sample Matrix X SOLID
7. Number of containers per sample: 1 (Or see CoC ____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [ ] No [X]
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: ACTUAL MATRIX IS SOLID
14. Was P.M. notified of any anomalies? Yes [X] No [ ] Date 05/13/08
15. Inspected by [signature] Date: 05/13/08 Time: 13:45

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

Ion Chamber Ser. No. ____ Calibration date ____

Alpha Meter Ser. No. ____ Calibration date ____

Beta/Gamma Meter Ser. No. 113722 Calibration date 13 SEP 08

LIONVILLE LABORATORY INC.

RECEIVED
JUN 2008

17 June 2008

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0805L115
SDG #	K1222
SAF #	RC-088
Date Received	5/13/08
# Samples	3
Matrix	OTHER LIQUID
Volatiles	
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

RECEIVED
JUN 2008

DATE RECEIVED: 05/13/08 LVL LOT #: 0805L115

CLIENT ID	LVL #		MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC0	001		S	08LE0247	05/06/08	05/20/08	05/27/08
J16VC0	001	01	S	08LE0247	05/06/08	05/20/08	06/01/08
J16VC1	002		S	08LE0247	05/06/08	05/20/08	05/27/08
J16VC1	002	01	S	08LE0247	05/06/08	05/20/08	06/01/08
J16VC1	002 MS		S	08LE0247	05/06/08	05/20/08	05/27/08
J16VC1	002 MSD		S	08LE0247	05/06/08	05/20/08	05/27/08
J16VC2	003		S	08LE0247	05/06/08	05/20/08	05/27/08
J16VC2	003	01	S	08LE0247	05/06/08	05/20/08	06/01/08

LAB QC:

SBLKUZ	MB1		S	08LE0247	N/A	05/20/08	05/27/08
SBLKUZ	MB1 BS		S	08LE0247	N/A	05/20/08	05/27/08

LIONVILLE LABORATORY INC.

Case Narrative
****Revision****

RECEIVED
OCT 2008

Client: TNU-HANFORD RC-088
LVL #: 0805L115
SDG/SAF # K1222/RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 05-13-2008

SEMIVOLATILE

Three (3) soil samples were collected on 05-06-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 05-20-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-27-2008 and 06-01-2008.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. Sample J16VC2 is reported on a wet weight basis. 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. Due to sample matrix (oily soil) the samples had a reduced initial extraction volume, J16VC0 (1.0 gram), J16VC1, J16VC1 MS, J16VC1 MSD (5.0 grams), and J16VC2 (1.0 grams). Reporting limits have been adjusted to reflect the reduced initial volume.

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

4. Samples J16VC0 DL, J16VC1 DL and J16VC2 DL required a 25-fold dilution due to high levels of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

5. All obtainable surrogate recoveries were within acceptance criteria.

6. Fifty-three (53) of one hundred and twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Two (2) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

r:\group\data\2008\bna\tnu\0805-115ks2rev.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 21 pages.

LIONVILLE LABORATORY INC.

8. The method blank was below the reporting limit for all target compounds.

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

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

11. Internal standard criteria were not met for sample J16VC1, J16VC1 MS, J16VC1MSD, J16VC0, and J16VC2. The out of criteria samples (J16VC1, J16VC0, J16VC2) were re-analyzed on 06-01-2008 at a 25-fold dilution for chromatographic anomalies. All internal standard criteria for the reanalysis were met.

12. 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").

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

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

Ian Daniels
Laboratory Manager
Lionville Laboratory Incorporated

10/13/08
Date

Richmond Laboratory Sample Discrepancy Report (SDR) SDR #: [illegible]

Initiator: Robert Carden Batch: 0905115 Parameter: 8260H
Date: 6/3/08 Samples: MS/MSD/BS Matrix: Soil
Client: TNU Hanford RL 0880 Method: SW846/MCAWW/CLP/ Prep Batch: 0906074
1C1222

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)

Several spike recoveries outside QC acceptance criteria. All reportable surrogate recoveries within acceptance criteria.

2. Known or Probable Causes(s) MS/MSD possible matrix effect - large unresolved hydrocarbon chromatographic peak several minutes wide interferes with quantitation of target compounds. BS Spike all other spike recoveries good

3. Discussion and Proposed Action Other Description: Hanford

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

6/3/08

4. Project Manager Instructions...signature/date: _____
__ 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: KDD 6-9-08 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
__ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

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

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

QA-139-A-0208

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

	Cust ID:	J16VC0	J16VC0	J16VC1	J16VC1	J16VC1	J16VC1
Sample Information	RFW#:	001	001 DL	002	002 DL	002 MS	002 MSD
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	25.0	1.00	25.0	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	79 %	54 %	67 %	49 %	61 %	41 %
	2-Fluorobiphenyl	76 %	72 %	69 %	69 %	79 %	45 %
	Terphenyl-d14	96 %	88 %	85 %	85 %	92 %	63 %
	Phenol-d5	81 %	60 %	66 %	42 %	79 %	50 %
	2-Fluorophenol	80 %	54 %	59 %	37 %	81 %	51 %
	2,4,6-Tribromophenol	57 %	0 D %	41 %	0 D %	75 %	42 %
		fl	fl	fl	fl	fl	fl
Phenol		11000 U	260000 U	2100 U	52000 U	78 %	51 %
bis(2-Chloroethyl)ether		11000 U	260000 U	2100 U	52000 U	66 %	44 * %
2-Chlorophenol		11000 U	260000 U	2100 U	52000 U	75 %	49 * %
1,3-Dichlorobenzene		11000 U	260000 U	2100 U	52000 U	66 %	44 * %
1,4-Dichlorobenzene		11000 U	260000 U	2100 U	52000 U	66 %	44 * %
1,2-Dichlorobenzene		11000 U	260000 U	2100 U	52000 U	69 %	45 * %
2-Methylphenol		11000 U	260000 U	2100 U	52000 U	71 %	47 * %
2,2'-oxybis(1-Chloropropane)		11000 U	260000 U	2100 U	52000 U	67 %	44 * %
3/4 Methylphenol		11000 U	260000 U	2100 U	52000 U	70 %	45 * %
N-Nitroso-di-n-propylamine		11000 U	260000 U	2100 U	52000 U	73 %	47 * %
Hexachloroethane		11000 U	260000 U	2100 U	52000 U	63 %	41 * %
Nitrobenzene		11000 U	260000 U	2100 U	52000 U	55 %	38 * %
Isophorone		11000 U	260000 U	2100 U	52000 U	64 %	45 * %
2-Nitrophenol		11000 U	260000 U	2100 U	52000 U	58 %	40 * %
2,4-Dimethylphenol		11000 U	260000 U	2100 U	52000 U	30 * %	19 * %
bis(2-Chloroethoxy)methane		11000 U	260000 U	2100 U	52000 U	58 %	41 %
2,4-Dichlorophenol		11000 U	260000 U	2100 U	52000 U	66 %	45 * %
1,2,4-Trichlorobenzene		11000 U	260000 U	2100 U	52000 U	57 * %	40 * %
Naphthalene		11000 U	260000 U	2100 U	52000 U	57 %	40 %
4-Chloroaniline		11000 U	260000 U	2100 U	52000 U	43 %	33 %
Hexachlorobutadiene		11000 U	260000 U	2100 U	52000 U	60 %	43 %
4-Chloro-3-methylphenol		11000 U	260000 U	2100 U	52000 U	65 %	45 * %
2-Methylnaphthalene		11000 U	260000 U	2100 U	52000 U	59 * %	42 * %
Hexachlorocyclopentadiene		11000 U	260000 U	2100 U	52000 U	32 %	16 * %
2,4,6-Trichlorophenol		11000 U	260000 U	2100 U	52000 U	86 %	68 %
2,4,5-Trichlorophenol		26000 U	660000 U	5200 U	130000 U	84 %	39 * %

*= Outside of EPA CLP QC limits.

0000000008

Cust ID:	J16VC0		J16VC0		J16VC1		J16VC1		J16VC1		J16VC1	
RFW#:	001		001 DL		002		002 DL		002 MS		002 MSD	
2-Chloronaphthalene	11000	U	260000	U	2100	U	52000	U	75	%	44 *	%
2-Nitroaniline	26000	U	660000	U	5200	U	130000	U	82	%	48 *	%
Dimethylphthalate	11000	U	260000	U	2100	U	52000	U	77	%	45 *	%
Acenaphthylene	11000	U	260000	U	2100	U	52000	U	76	%	46 *	%
2,6-Dinitrotoluene	11000	U	260000	U	2100	U	52000	U	76	%	45 *	%
3-Nitroaniline	26000	U	660000	U	5200	U	130000	U	71	%	44 *	%
Acenaphthene	11000	U	260000	U	2100	U	52000	U	73	%	45	%
2,4-Dinitrophenol	26000	U	660000	U	5200	U	130000	U	13 *	%	6 *	%
4-Nitrophenol	26000	U	660000	U	5200	U	130000	U	113	%	92	%
Dibenzofuran	11000	U	260000	U	2100	U	52000	U	74	%	46 *	%
2,4-Dinitrotoluene	11000	U	260000	U	2100	U	52000	U	77	%	44 *	%
Diethylphthalate	11000	U	260000	U	2100	U	52000	U	73	%	45 *	%
4-Chlorophenyl-phenylether	11000	U	260000	U	2100	U	52000	U	65	%	42 *	%
Fluorene	11000	U	260000	U	2100	U	52000	U	72	%	45 *	%
4-Nitroaniline	26000	U	660000	U	5200	U	130000	U	79	%	50	%
4,6-Dinitro-2-methylphenol	26000	U	660000	U	5200	U	130000	U	21 *	%	9 *	%
N-Nitrosodiphenylamine (1)	11000	U	260000	U	2100	U	52000	U	61	%	33 *	%
4-Bromophenyl-phenylether	11000	U	260000	U	2100	U	52000	U	63	%	38 *	%
Hexachlorobenzene	11000	U	260000	U	2100	U	52000	U	69	%	44 *	%
Pentachlorophenol	26000	U	660000	U	5200	U	130000	U	89	%	57	%
Phenanthrene	1200	J	260000	U	2100	U	52000	U	95	%	71	%
Anthracene	11000	U	260000	U	2100	U	52000	U	65	%	28 *	%
Carbazole	11000	U	260000	U	2100	U	52000	U	80	%	42 *	%
Di-n-butylphthalate	11000	U	260000	U	2100	U	52000	U	71	%	43	%
Fluoranthene	11000	U	260000	U	2100	U	52000	U	65	%	35 *	%
Pyrene	11000	U	260000	U	2100	U	52000	U	95	%	60	%
Butylbenzylphthalate	11000	U	260000	U	2100	U	52000	U	57	%	43 *	%
3,3'-Dichlorobenzidine	11000	U	260000	U	2100	U	52000	U	72	%	49	%
Benzo(a)anthracene	11000	U	260000	U	2100	U	52000	U	87	%	65	%
Chrysene	11000	U	260000	U	2100	U	52000	U	61	%	19 *	%
bis(2-Ethylhexyl)phthalate	11000	U	260000	U	2100	U	52000	U	69	%	43 *	%
Di-n-octyl phthalate	11000	U	260000	U	2100	U	52000	U	35 *	%	20 *	%
Benzo(b)fluoranthene	11000	U	260000	U	2100	U	52000	U	65	%	34 *	%
Benzo(k)fluoranthene	11000	U	260000	U	2100	U	52000	U	30 *	%	36 *	%
Benzo(a)pyrene	11000	U	260000	U	2100	U	52000	U	61	%	38 *	%
Indeno(1,2,3-cd)pyrene	11000	U	260000	U	2100	U	52000	U	90	%	68	%
Dibenz(a,h)anthracene	11000	U	260000	U	2100	U	52000	U	92	%	67	%
Benzo(g,h,i)perylene	11000	U	260000	U	2100	U	52000	U	102	%	76	%

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

600000000

	Cust ID:	J16VC2		J16VC2		SBLKUZ		SBLKUZ BS	
Sample Information	RFW#:	003		003 DL		08LE0247-MB1		08LE0247-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		25.0		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	66	%	58	%	72	%	62	%
	2-Fluorobiphenyl	64	%	64	%	71	%	77	%
	Terphenyl-d14	54	%	83	%	76	%	88	%
	Phenol-d5	68	%	34	%	75	%	83	%
	2-Fluorophenol	73	%	47	%	79	%	86	%
	2,4,6-Tribromophenol	62	%	0 D	%	59	%	73	%
Phenol		520	J	250000	U	330	U	84	%
bis(2-Chloroethyl)ether		10000	U	250000	U	330	U	74	%
2-Chlorophenol		10000	U	250000	U	330	U	79	%
1,3-Dichlorobenzene		10000	U	250000	U	330	U	72	%
1,4-Dichlorobenzene		10000	U	250000	U	330	U	71	%
1,2-Dichlorobenzene		10000	U	250000	U	330	U	74	%
2-Methylphenol		10000	U	250000	U	330	U	78	%
2,2'-oxybis(1-Chloropropane)		10000	U	250000	U	330	U	77	%
3/4 Methylphenol		10000	U	250000	U	330	U	80	%
N-Nitroso-di-n-propylamine		10000	U	250000	U	330	U	80	%
Hexachloroethane		10000	U	250000	U	330	U	72	%
Nitrobenzene		10000	U	250000	U	330	U	58	%
Isophorone		10000	U	250000	U	330	U	66	%
2-Nitrophenol		10000	U	250000	U	330	U	59	%
2,4-Dimethylphenol		10000	U	250000	U	330	U	61	%
bis(2-Chloroethoxy)methane		10000	U	250000	U	330	U	59	%
2,4-Dichlorophenol		10000	U	250000	U	330	U	58	%
1,2,4-Trichlorobenzene		10000	U	250000	U	330	U	55 *	%
Naphthalene		10000	U	250000	U	330	U	57	%
4-Chloroaniline		10000	U	250000	U	330	U	42	%
Hexachlorobutadiene		10000	U	250000	U	330	U	60	%
4-Chloro-3-methylphenol		10000	U	250000	U	330	U	65	%
2-Methylnaphthalene		10000	U	250000	U	330	U	59 *	%
Hexachlorocyclopentadiene		10000	U	250000	U	330	U	63	%
2,4,6-Trichlorophenol		10000	U	250000	U	330	U	81	%
2,4,5-Trichlorophenol		25000	U	620000	U	830	U	82	%

*= Outside of EPA CLP QC limits.

010000000

Cust ID:	J16VC2		J16VC2		SBLKUZ		SBLKUZ BS	
RFW#:	003		003 DL		08LE0247-MB1		08LE0247-MB1	
2-Chloronaphthalene	10000	U	250000	U	330	U	74	%
2-Nitroaniline	25000	U	620000	U	830	U	86	%
Dimethylphthalate	10000	U	250000	U	330	U	77	%
Acenaphthylene	10000	U	250000	U	330	U	76	%
2,6-Dinitrotoluene	10000	U	250000	U	330	U	79	%
3-Nitroaniline	25000	U	620000	U	830	U	74	%
Acenaphthene	10000	U	250000	U	330	U	75	%
2,4-Dinitrophenol	25000	U	620000	U	830	U	23	%
4-Nitrophenol	25000	U	620000	U	830	U	82	%
Dibenzofuran	10000	U	250000	U	330	U	75	%
2,4-Dinitrotoluene	10000	U	250000	U	330	U	84	%
Diethylphthalate	10000	U	250000	U	330	U	78	%
4-Chlorophenyl-phenylether	10000	U	250000	U	330	U	73	%
Fluorene	10000	U	250000	U	330	U	75	%
4-Nitroaniline	25000	U	620000	U	830	U	80	%
4,6-Dinitro-2-methylphenol	25000	U	620000	U	830	U	40	%
N-Nitrosodiphenylamine (1)	10000	U	250000	U	330	U	61	%
4-Bromophenyl-phenylether	10000	U	250000	U	330	U	64	%
Hexachlorobenzene	10000	U	250000	U	330	U	75	%
Pentachlorophenol	25000	U	620000	U	830	U	55	%
Phenanthrene	10000	U	250000	U	330	U	76	%
Anthracene	10000	U	250000	U	330	U	80	%
Carbazole	10000	U	250000	U	330	U	79	%
Di-n-butylphthalate	620	J	250000	U	330	U	81	%
Fluoranthene	10000	U	250000	U	330	U	81	%
Pyrene	10000	U	250000	U	330	U	82	%
Butylbenzylphthalate	10000	U	250000	U	330	U	88	%
3,3'-Dichlorobenzidine	10000	U	250000	U	330	U	64	%
Benzo(a)anthracene	10000	U	250000	U	330	U	76	%
Chrysene	10000	U	250000	U	330	U	77	%
bis(2-Ethylhexyl)phthalate	2200	JB	250000	U	23	J	91	%
Di-n-octyl phthalate	10000	U	250000	U	330	U	89	%
Benzo(b)fluoranthene	10000	U	250000	U	330	U	73	%
Benzo(k)fluoranthene	10000	U	250000	U	330	U	72	%
Benzo(a)pyrene	10000	U	250000	U	330	U	72	%
Indeno(1,2,3-cd)pyrene	10000	U	250000	U	330	U	69	%
Dibenz(a,h)anthracene	10000	U	250000	U	330	U	69	%
Benzo(g,h,i)perylene	10000	U	250000	U	330	U	69	%

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16VC0

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0805L115-001

Sample wt/vol: 1.00 (g/mL) G Lab File ID: C052705

Level: (low/med) LOW Date Received: 05/13/08

% Moisture: 5 decanted: (Y/N)__ Date Extracted: 05/20/08

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/27/08

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.004	2000000	JAB
2.	UNKNOWN	6.082	1000000	JB
3.	ALDOL CONDENSATE	7.365	100000	JAB
4.	ALKANE	21.621	80000	J
5.	UNKNOWN	34.033	200000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16VC0DL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0805L115-001 DL

Sample wt/vol: 1.00 (g/mL) G Lab File ID: C053115

Level: (low/med) LOW Date Received: 05/13/08

% Moisture: 5 decanted: (Y/N)__ Date Extracted: 05/20/08

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/01/08

Injection Volume: 2.0(uL) Dilution Factor: 25.0

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.428	8000000	JAB
2.	UNKNOWN	25.644	400000	J
3.	UNKNOWN	26.626	500000	J
4.	UNKNOWN	27.109	300000	J
5.	UNKNOWN	27.565	200000	J

FORM 1 SV-TIC RFW (v3.3)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16VC1

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0805L115-002

Sample wt/vol: 5.00 (g/mL) G Lab File ID: C052706

Level: (low/med) LOW Date Received: 05/13/08

% Moisture: 5 decanted: (Y/N) __ Date Extracted: 05/20/08

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/27/08

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.977	400000	JAB
2.	UNKNOWN	6.002	80000	J
3.	UNKNOWN	6.028	80000	JB
4.	UNKNOWN	6.046	80000	J
5.	UNKNOWN	6.071	60000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16VC1DL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0805L115-002 DL

Sample wt/vol: 5.00 (g/mL) G Lab File ID: C053116

Level: (low/med) LOW Date Received: 05/13/08

% Moisture: 5 decanted: (Y/N) __ Date Extracted: 05/20/08

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/01/08

Injection Volume: 2.0 (uL) Dilution Factor: 25.0

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.428	2000000	JAB
2.	UNKNOWN	25.635	70000	J
3.	UNKNOWN	26.643	100000	J
4.	UNKNOWN	27.099	60000	J
5.	UNKNOWN	27.564	50000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16VC2

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0805L115-003

Sample wt/vol: 1.00 (g/mL) G Lab File ID: C052709

Level: (low/med) LOW Date Received: 05/13/08

% Moisture: 100 decanted: (Y/N)__ Date Extracted: 05/20/08

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/27/08

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN			J
2. 626-93-7	2-HEXANOL	3.935	90000	JN
3.	ALDOL CONDENSATE	5.434	200000	JAB
4.	ALDOL CONDENSATE	6.054	3000000	JAB
5.	ALDOL CONDENSATE	7.363	90000	JAB
6.	ALKANE	23.996	50000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16VC2DL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 0805L115-003 DL

Sample wt/vol: 1.00 (g/mL) G Lab File ID: C053117

Level: (low/med) LOW Date Received: 05/13/08

% Moisture: 100 decanted: (Y/N)__ Date Extracted: 05/20/08

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/01/08

Injection Volume: 2.0(uL) Dilution Factor: 25.0

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.882	200000	JAB
2.	ALDOL CONDENSATE	5.425	8000000	JAB
3.	ALAKNE	22.583	100000	J
4.	ALKANE	23.160	200000	J
5.	ALKANE	23.574	200000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKUZ

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 08LE0247-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C052703

Level: (low/med) LOW Date Received: 05/20/08

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 05/20/08

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/27/08

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.899	400	J
2.	ALDOL CONDENSATE	5.381	7000	JA
3.	ALDOL CONDENSATE	5.984	80000	JA
4.	UNKNOWN	6.036	40000	J
5.	ALDOL CONDENSATE	7.362	3000	JA

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08052115

Custody Transfer Record/Lab Work Request

Page 1 of 1

LYLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

000000019

lent TNU HANFORD SAF# RC-088

t. Final Proj. Sampling Date

oject # 11343-606-001 9889-00

oject Contact/Phone #

onville Laboratory Project Manager C JOHNSON

SW846 Del STD TAT 15 DAYS

te Rec'd 5-13-08 Date Due 5-29-08

Refrigerator #			A 3													
#/Type Container	Liquid															
	Solid		16													
Volume	Liquid															
	Solid		250													
Preservatives																
ANALYSES REQUESTED →			ORGANIC							INORG						
			VOA	BNA	Pest/PCB	Herb				Tot Metal Hg	CN	TBN TAB				
										Lionville Laboratory Use Only						
				0625H	OPCB					MetD		IIGN				

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected											
Soil	001	J 16 VC0			SOIL	5-6-08	0840		X	P				X		X		
Sediment	002	J 16 VC1					1010		X	X				X		X		
Solid	003	J 16 VC2					1035		X	P				X		X		
Sludge																		
Water																		
Oil																		
Air																		
Drum Solids																		
Drum Liquids																		
EP/TCLP Leachate																		
Wipe																		
Other																		
Fish																		

pecial Instructions: Oily Soil

Met① = HSL + Sn, Zr

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
		5-13-08	1416					ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-019 | Page 1 of 1

lector . Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 Days		
iect Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. ERC-02-505	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx
nped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080247		Bill of Lading/Air Bill No. See OSPC

000000020

)SSIBLE SAMPLE HAZARDS/REMARKS

tential Radioactive contamination, potential beryllium ntamination

ıecial Handling and/or Storage

ne

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	P	P	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions	TIED TO				B-12 Box #

RTC 5/6/08

Sample No.	Matrix *	Sample Date	Sample Time									
iVC0	OTHER LIQUID	5/6/08	0840	X	X	X	X		J16VD0		OILY SOIL	0272
iVC1	OTHER LIQUID	5/6/08	1010	X	X	X	X		J16VD1		OILY SOIL	0225
6VC2	OTHER LIQUID	5/6/08	1035	X	X	X	X		J16VD2		OILY SOIL	0226

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Harries/E. Harries	5/6/08 1245	RTCoffman/RTCoffman	5/6/08 1245
TCoffman/RTCoffman	5/6/08 1430	REECE #1A, 1060 BLDG	5/6/08 1430
60/1A 1015	MAY 12 2008	MLL mstankovich	MAY 12 2008
mstankovich 1015	MAY 12 2008		FedEx
FedEx	5/13/08 1416		5/13/08 1416

SPECIAL INSTRUCTIONS

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

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

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

LBORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

:H-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFOR

Date: 5-13-08

Project/SAF/SOW/Release #:

LvLI Batch #: 0805L115

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 798439379928
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3-6°	°C	Cooler # ERC-02-505
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.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

RECEIVED
JUN 2008

DATE RECEIVED: 05/13/08 LVL LOT # 0805L115

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC0	001	S	08LE0238	05/06/08	05/16/08	05/21/08
J16VC1	002	S	08LE0238	05/06/08	05/16/08	05/21/08
J16VC1	002 MS	S	08LE0238	05/06/08	05/16/08	05/21/08
J16VC1	002 MSD	S	08LE0238	05/06/08	05/16/08	05/21/08
J16VC2	003	S	08LE0238	05/06/08	05/16/08	05/21/08
LAB QC:						
PBLKQM	MB1	S	08LE0238	N/A	05/16/08	05/20/08
PBLKQM	MB1 BS	S	08LE0238	N/A	05/16/08	05/20/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0805L115
SDG/SAF # K1222 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 05-13-2008

PCB

Three (3) soil samples were collected on 05-06-2008.

The samples and their associated QC samples were extracted on 05-16-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 05-20,21-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory 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 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. Two (2) of fourteen (14) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
5. All 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.

g:\group\data\pest\tnu\0805-115ks2.pcb.doc

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

LvLI
LIONVILLE LABORATORY INC.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/27/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory Use Only

08052115

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU HANFORD SAF# RC-088

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: A. JOHNSON

QC SW846 Del STD TAT 15 DAYS

Date Rec'd: 5-13-08 Date Due: 5-29-08

Refrigerator #			A 3														
#/Type Container	Liquid / Solid		16														
Volume	Liquid / Solid		250														
Preservatives																	
ANALYSES REQUESTED →		VOA	BNA	~~Pest~~/PCB	Herb				TCP Metal HG	CN	TPH-HCID						
		ORGANIC							INORG								
		Lionville Laboratory Use Only															
			0625H	0PCB					Met①		IIGN						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	PCB	Herb				Met①	CN	IIGN				
001	J 16VC0			SOIL	5-6-08	0840		X	X					X		X				
002	J 16VC1			↓	↓	1010		X	X					X		X				
003	J 16VC2			↓	↓	1035		X	X					X		X				

Special Instructions: Oily Soil

Met① = HSL + Sn, Zr

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5-13-08	1416

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000005

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-088-019	Page 1 of 1
lector B. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9G
Data Turnaround 15 Days				
ject Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088	
Chest No. ERC-02-505	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080247		Bill of Lading/Air Bill No. See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RTC 5/6/08	TIED TO					B-12 Box #

Sample No.	Matrix *	Sample Date	Sample Time										
6VC0	OTHER LIQUID	5/6/08	0840	X	X	X	X		J16VD0		oily Soil	0272
6VC1	OTHER LIQUID	5/6/08	1010	X	X	X	X		J16VD1		oily Soil	0225
16VC2	OTHER LIQUID	5/6/08	1035	X	X	X	X		J16VD2		oily Soil	0226

CHAIN OF POSSESSION	Sign/Print Names	
inquished By/Removed From Harries/E. Harries	Date/Time 1245 5/6/08	Received By/Stored In RTCoffman/RTCoffman
Date/Time 1245 5/6/08		
inquished By/Removed From TCoffman/RTCoffman	Date/Time 1430 5/6/08	Received By/Stored In Reece #1A, 1060 BLDG, 5/6/08
Date/Time 1430 5/6/08		
inquished By/Removed From 260/1A	Date/Time 1015 MAY 12 2008	Received By/Stored In MSTANKOVICH
Date/Time 1015 MAY 12 2008		
inquished By/Removed From MSTANKOVICH	Date/Time 1015 MAY 12 2008	Received By/Stored In FedEx
Date/Time FedEx		
inquished By/Removed From FedEx	Date/Time 5/13/08 1416	Received By/Stored In [illegible]
Date/Time 5/13/08 1416		
inquished By/Removed From	Date/Time	Received By/Stored In
Date/Time		

SPECIAL INSTRUCTIONS

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

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

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

JKD AMB

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

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

CH-EE-011

000000006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFOR **Date:** 5-13-08

Project/SAF/SOW/Release #:

LvLI Batch #: 0805L115 **Sample Custodian:** Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 798439379928
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3-6°	°C	Cooler # ERC-02-505
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.

PCBs by GC

Report Date: 05/21/08 13:03

RFW Batch Number: **0805L115** Client: **TNUHANFORD RC-088 K1222** Work Order: 11343606001 Page: 1

000000008

	Cust ID:	J16VC0	J16VC1	J16VC1	J16VC1	J16VC2	PBLKQM
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	08LE0238-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	76 %	84 %	75 %	71 %	82 %	103 %
	Decachlorobiphenyl	46 %	44 %	38 * %	32 * %	45 %	95 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		420 U	10 J	71 %	71 %	400 U	13 U
Aroclor-1221		420 U	42 U	42 U	42 U	400 U	13 U
Aroclor-1232		420 U	42 U	42 U	42 U	400 U	13 U
Aroclor-1242		420 U	42 U	42 U	42 U	400 U	13 U
Aroclor-1248		420 U	42 U	42 U	42 U	400 U	13 U
Aroclor-1254		420 U	24 J	NR	NR	420	13 U
Aroclor-1260		420 U	42 U	62 %	58 %	400 U	13 U

	Cust ID:	PBLKQM BS
Sample Information	RFW#:	08LE0238-MB1
	Matrix:	SOIL
	D.F.:	1.00
	Units:	UG/KG
Surrogate:	Tetrachloro-m-xylene	98 %
	Decachlorobiphenyl	89 %
		fl
Aroclor-1016		92 %
Aroclor-1221		13 U
Aroclor-1232		13 U
Aroclor-1242		13 U
Aroclor-1248		13 U
Aroclor-1254		13 U
Aroclor-1260		86 %

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

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 05/16/08 Extraction Batch No: 08LE0238 Analyst: MF Method: **** SOX 3540

Test: OPCB Cleanup Date: 05/19/08 Analyst: MF Client: TNUHANFORD RC-088 K1222

LIMS Report Date: 05/21/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0805L115-	TNUHANFORD RC-088 K1222										
001	J16VC0		1.0	1.0		10		1.0	N	94.96	10531
002	J16VC1		10.0	1.0		10		1.0	N	95.43	1047.9
002 -S	J16VC1		10.0	1.0	1.0	10		1.0	N	95.43	1047.9
002 -T	J16VC1		10.0	1.0	1.0	10		1.0	N	95.43	1047.9
003	J16VC2		1.0	1.0		10		1.0	N	0.00	10000
0805L116-	STOLLER QXP02218K1A										
002	SW414		30.0	1.0		10		1.0	N	0.00	333.3
004	SW417		30.0	1.0		10		1.0	N	0.00	333.3
006	SW429		30.0	1.0		10		1.0	N	0.00	333.3
008	SW435		30.0	1.0		10		1.0	N	0.00	333.3
0805L126-	VISTA ENGINEERING										
001	B133		30.0	1.0		10		1.0	N	94.75	351.8
003	B135		30.0	1.0		10		1.0	N	94.01	354.6
004	B137		30.0	1.0		10		1.0	N	96.03	347.1
005	B138		30.0	1.0		10		1.0	N	95.01	350.8
08LE0238-MB1	PBLKQM		30.0	1.0		10		1.0	N	100.00	333.3
08LE0238-MB1 -S	PBLKQM		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916406
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
		5/20/08 1230	SZ	5/20/08	GC

Rev

600000000

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

DATE RECEIVED: 05/13/08 LVL LOT # :0805L115

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC0						
SILVER, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
SILVER, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
SILVER, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
ALUMINUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
ALUMINUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
ALUMINUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
ARSENIC, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
ARSENIC, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
ARSENIC, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
BARIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
BARIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
BARIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
BERYLLIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
BERYLLIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
BERYLLIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
CALCIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
CALCIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
CALCIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
CADMIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
CADMIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
CADMIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
COBALT, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
COBALT, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
COBALT, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
CHROMIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
CHROMIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
CHROMIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
COPPER, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
COPPER, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
COPPER, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
IRON, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
IRON, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
IRON, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
MERCURY, TOTAL	001	S	08C0087	05/06/08	05/19/08	05/20/08
MERCURY, TOTAL	001 REP	S	08C0087	05/06/08	05/19/08	05/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

DATE RECEIVED: 05/13/08 LVL LOT # :0805L115

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	001 MS	S	08C0087	05/06/08	05/19/08	05/20/08
POTASSIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/29/08
POTASSIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/29/08
POTASSIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/29/08
MAGNESIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
MAGNESIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
MAGNESIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
MANGANESE, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
MANGANESE, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
MANGANESE, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
SODIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/29/08
SODIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/29/08
SODIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/29/08
NICKEL, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
NICKEL, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
NICKEL, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
LEAD, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
LEAD, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
LEAD, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
ANTIMONY, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
ANTIMONY, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
ANTIMONY, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
SELENIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
SELENIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
SELENIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
TIN, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
TIN, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
TIN, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
THALLIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
THALLIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
THALLIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
VANADIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
VANADIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
VANADIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
ZINC, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08
ZINC, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
ZINC, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
ZIRCONIUM, TOTAL	001	S	08L0214	05/06/08	05/23/08	05/28/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

DATE RECEIVED: 05/13/08 LVL LOT # :0805L115

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM, TOTAL	001 REP	S	08L0214	05/06/08	05/23/08	05/28/08
ZIRCONIUM, TOTAL	001 MS	S	08L0214	05/06/08	05/23/08	05/28/08
J16VC1						
SILVER, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
ALUMINUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
ARSENIC, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
BARIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
BERYLLIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
CALCIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
CADMIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
COBALT, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
CHROMIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
COPPER, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
IRON, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
MERCURY, TOTAL	002	S	08C0087	05/06/08	05/19/08	05/20/08
POTASSIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/29/08
MAGNESIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
MANGANESE, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
SODIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/29/08
NICKEL, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
LEAD, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
ANTIMONY, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
SELENIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
TIN, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
THALLIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
VANADIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
ZINC, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
ZIRCONIUM, TOTAL	002	S	08L0214	05/06/08	05/23/08	05/28/08
J16VC2						
SILVER, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
ALUMINUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
ARSENIC, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
BARIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
BERYLLIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

DATE RECEIVED: 05/13/08 LVL LOT # :0805L115

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CALCIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
CADMIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
COBALT, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
CHROMIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
COPPER, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
IRON, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
MERCURY, TOTAL	003	S	08C0087	05/06/08	05/19/08	05/20/08
POTASSIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/29/08
MAGNESIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
MANGANESE, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
SODIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/29/08
NICKEL, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
LEAD, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
ANTIMONY, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
SELENIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
TIN, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
THALLIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
VANADIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
ZINC, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08
ZIRCONIUM, TOTAL	003	S	08L0214	05/06/08	05/23/08	05/28/08

AB QC:

SILVER LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
SILVER, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
ALUMINUM LABORTORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
ALUMINUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
ARSENIC LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
ARSENIC, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
BARIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
BARIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
BERYLLIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
CALCIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
CALCIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
CADMIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
CADMIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
COBALT LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

DATE RECEIVED: 05/13/08 LVL LOT # :0805L115

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COBALT, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
CHROMIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
CHROMIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
COPPER LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
COPPER, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
IRON LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
IRON, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
MERCURY LABORATORY	LC1 BS	S	08C0087	N/A	05/19/08	05/20/08
MERCURY, TOTAL	MB1	S	08C0087	N/A	05/19/08	05/20/08
POTASSIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/29/08
POTASSIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/29/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
MAGNESIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
MANGANESE LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
MANGANESE, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
SODIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/29/08
SODIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/29/08
NICKEL LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
NICKEL, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
LEAD LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
LEAD, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
ANTIMONY LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
ANTIMONY, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
SELENIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
SELENIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
TIN LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
TIN, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
THALLIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
THALLIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
VANADIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
VANADIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
ZINC LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
ZINC, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0214	N/A	05/23/08	05/28/08
ZIRCONIUM, TOTAL	MB1	S	08L0214	N/A	05/23/08	05/28/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088
LVL#: 0805L115
SDG/SAF#: K1222/RC-088

W.O.#: 11343-606-001-9999-00
Date Received: 05-13-08

METALS CASE NARRATIVE

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

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

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

2. The samples werre prepared and analyzed in accordance with methods checked on the attached glossary. Sample J16VC2 was reported on a wet weight "as received" basis.

   All samples were run and reported with 3-fold dilutions for ICP analytes and 5-fold dilutions for Mercury due to sample matrix.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of Sodium and Potassium in file TA0528A. The samples were rerun for Sodium and Potassium in file PS0529A. CCV5 for Mercury was outside the 80-120% control limit. All samples were bracketed by in control CCVs. ICVs and CCVs were within control limits for all data contained within this report.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ) with the exception of CCB5 for Mercury. All samples were bracketed by in control ICBs and CCBs.

6. The preparation/method blank 08L0214 for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 22 pages.

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

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

9. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits in the solid sample. 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
J16VC0	Aluminum	60,000	97.5
	Calcium	60,000	100.0
	Iron	60,000	103.1
	Manganese	3,000	112.3
	Antimony	300	101.7

11. The duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits for the solid sample. Refer to the Inorganics Precision Report.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/4/08
Date

alm/m05-115

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

ɔt#: 0805L115

eaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
luminum	✓6010B		__200.7				__99
ntimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
rsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
arium	✓6010B		__200.7				__99
eryllium	✓6010B		__200.7				__99
ismuth	__6010B [1]		__200.7 [1]			__1620	__99
oron	__6010B		__200.7				__99
admium	✓6010B	__7131A [5]	__200.7	__213.2			__99
alcium	✓6010B		__200.7				__99
hromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
obalt	✓6010B		__200.7				__99
opper	✓6010B	__7211 [5]	__200.7	__220.2			__99
ron	✓6010B		__200.7				__99
ead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
ithium	__6010B	__7430 [4]	__200.7			__1620	__99
agnesium	✓6010B		__200.7				__99
anganese	✓6010B		__200.7				__99
ercury	__7470A [3]	✓__7471A [3]	__245.1 [2]	__245.5 [2]			__99
olybdenum	__6010B		__200.7				__99
ickel	✓6010B		__200.7				__99
otassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
are Earths	__6010B [1]		__200.7 [1]			__1620	__99
elenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
ilicon	__6010B [1]		__200.7			__1620	__99
ilica	__6010B		__200.7			__1620	__99
ilver	✓6010B	__7761 [5]	__200.7	__272.2			__99
odium	✓6010B	__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	✓6010B		__200.7				__99
inc	✓6010B		__200.7				__99
irconium	✓6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-WI-033/M-03/01
000000008

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.

B = Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

Q QUALIFIERS

E = The reported value is estimated because of the presence of interference.

M = Duplicate injection precision not met.

N = Spiked sample recovery not within control limits.

S = The reported value was determined by the Method of Standard Additions (MSA).

W = Post Digestion spike for Furnace AA analysis is out of control limits (85 -115 %), while sample absorbance is less than 50% of spike absorbance.

* = Duplicate analysis not within control limits.

+ = Correlation coefficient for the MSA is less than 0.995.

ABBREVIATIONS

PB = Method or Preparation Blank.
S = Matrix Spike.
T = Matrix Spike Duplicate.
R or D = Sample Replicate

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.

RFW 21-21L-033/O-01/97

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/30/08

CLIENT: TNUHANFORD RC-088 K1222 LVL LOT #: 0805L115

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16VC0	Silver, Total	0.27 u	MG/KG	0.27	3.0
		Aluminum, Total	4180	MG/KG	10.8	3.0
		Arsenic, Total	1.4 u	MG/KG	1.4	3.0
		Barium, Total	59.3	MG/KG	0.27	3.0
		Beryllium, Total	0.14 u	MG/KG	0.14	3.0
		Calcium, Total	5910	MG/KG	10.8	3.0
		Cadmium, Total	0.15	MG/KG	0.14	3.0
		Cobalt, Total	7.8	MG/KG	0.54	3.0
		Chromium, Total	8.6	MG/KG	0.54	3.0
		Copper, Total	17.7	MG/KG	0.54	3.0
		Iron, Total	22800	MG/KG	12.2	3.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	599	MG/KG	133	3.0
		Magnesium, Total	3840	MG/KG	6.8	3.0
		Manganese, Total	288	MG/KG	0.11	3.0
		Sodium, Total	282	MG/KG	5.4	3.0
		Nickel, Total	11.3	MG/KG	0.54	3.0
		Lead, Total	3.1	MG/KG	0.81	3.0
		Antimony, Total	0.81 u	MG/KG	0.81	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Tin, Total	1.6 u	MG/KG	1.6	3.0
		Thallium, Total	1.6 u	MG/KG	1.6	3.0
		Vanadium, Total	66.0	MG/KG	0.38	3.0
		Zinc, Total	50.9	MG/KG	1.6	3.0
		Zirconium, Total	20.7	MG/KG	13.5	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/30/08

CLIENT: TNUHANFORD RC-088 K1222 LVL LOT #: 0805L115

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J16VC1	Silver, Total	0.24 u	MG/KG	0.24	3.0
		Aluminum, Total	4990	MG/KG	9.6	3.0
		Arsenic, Total	2.8	MG/KG	1.2	3.0
		Barium, Total	99.9	MG/KG	0.24	3.0
		Beryllium, Total	0.12 u	MG/KG	0.12	3.0
		Calcium, Total	6860	MG/KG	9.6	3.0
		Cadmium, Total	0.12 u	MG/KG	0.12	3.0
		Cobalt, Total	8.0	MG/KG	0.48	3.0
		Chromium, Total	6.9	MG/KG	0.48	3.0
		Copper, Total	14.6	MG/KG	0.48	3.0
		Iron, Total	25200	MG/KG	10.8	3.0
		Mercury, Total	0.04 u	MG/KG	0.04	5.0
		Potassium, Total	955	MG/KG	118	3.0
		Magnesium, Total	3900	MG/KG	6.0	3.0
		Manganese, Total	331	MG/KG	0.1	3.0
		Sodium, Total	216	MG/KG	4.8	3.0
		Nickel, Total	9.3	MG/KG	0.48	3.0
		Lead, Total	9.0	MG/KG	0.72	3.0
		Antimony, Total	0.72 u	MG/KG	0.72	3.0
		Selenium, Total	1.4 u	MG/KG	1.4	3.0
		Tin, Total	1.4 u	MG/KG	1.4	3.0
		Thallium, Total	1.4 u	MG/KG	1.4	3.0
		Vanadium, Total	68.7	MG/KG	0.34	3.0
		Zinc, Total	190	MG/KG	1.4	3.0
		Zirconium, Total	23.8	MG/KG	12.0	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/30/08

CLIENT: TNUHANFORD RC-088 K1222 LVL LOT #: 0805L115

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J16VC2	Silver, Total	0.24 u	MG/KG	0.24	3.0
		Aluminum, Total	10900	MG/KG	9.7	3.0
		Arsenic, Total	1.7	MG/KG	1.2	3.0
		Barium, Total	68.6	MG/KG	0.24	3.0
		Beryllium, Total	0.12 u	MG/KG	0.12	3.0
		Calcium, Total	5230	MG/KG	9.7	3.0
		Cadmium, Total	0.12 u	MG/KG	0.12	3.0
		Cobalt, Total	11.6	MG/KG	0.48	3.0
		Chromium, Total	72.2	MG/KG	0.48	3.0
		Copper, Total	135	MG/KG	0.48	3.0
		Iron, Total	27900	MG/KG	10.9	3.0
		Mercury, Total	0.04 u	MG/KG	0.04	5.0
		Potassium, Total	797	MG/KG	119	3.0
		Magnesium, Total	3380	MG/KG	6.0	3.0
		Manganese, Total	304	MG/KG	0.1	3.0
		Sodium, Total	223	MG/KG	4.8	3.0
		Nickel, Total	49.7	MG/KG	0.48	3.0
		Lead, Total	25.5	MG/KG	0.73	3.0
		Antimony, Total	0.73 u	MG/KG	0.73	3.0
		Selenium, Total	1.5 u	MG/KG	1.5	3.0
		Tin, Total	3.1	MG/KG	1.5	3.0
		Thallium, Total	1.5 u	MG/KG	1.5	3.0
		Vanadium, Total	57.0	MG/KG	0.34	3.0
		Zinc, Total	276	MG/KG	1.5	3.0
		Zirconium, Total	22.8	MG/KG	12.1	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/30/08

CLIENT: TNUHANFORD RC-088 K1222 LVL LOT #: 0805L115

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0214-MB1	Silver, Total	0.10	u	MG/KG	0.10	1.0
		Aluminum, Total	4.0	u	MG/KG	4.0	1.0
		Arsenic, Total	0.50	u	MG/KG	0.50	1.0
		Barium, Total	0.19		MG/KG	0.10	1.0
		Beryllium, Total	0.05	u	MG/KG	0.05	1.0
		Calcium, Total	10.5		MG/KG	4.0	1.0
		Cadmium, Total	0.05	u	MG/KG	0.05	1.0
		Cobalt, Total	0.20	u	MG/KG	0.20	1.0
		Chromium, Total	0.20	u	MG/KG	0.20	1.0
		Copper, Total	0.20	u	MG/KG	0.20	1.0
		Iron, Total	19.4		MG/KG	4.5	1.0
		Potassium, Total	49.3	u	MG/KG	49.3	1.0
		Magnesium, Total	4.0		MG/KG	2.5	1.0
		Manganese, Total	0.12		MG/KG	0.04	1.0
		Sodium, Total	29.5		MG/KG	2.0	1.0
		Nickel, Total	0.20	u	MG/KG	0.20	1.0
		Lead, Total	0.30	u	MG/KG	0.30	1.0
		Antimony, Total	0.30	u	MG/KG	0.30	1.0
		Selenium, Total	0.60	u	MG/KG	0.60	1.0
		Tin, Total	1.0		MG/KG	0.60	1.0
		Thallium, Total	0.60	u	MG/KG	0.60	1.0
		Vanadium, Total	0.14	u	MG/KG	0.14	1.0
		Zinc, Total	0.60	u	MG/KG	0.60	1.0
		Zirconium, Total	5.0	u	MG/KG	5.0	1.0
BLANK1	08C0087-MB1	Mercury, Total	0.01	u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/30/08

CLIENT: TNUHANFORD RC-088 K1222 LVL LOT #: 0805L115

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16VC0	Silver, Total	4.0	0.27u	4.5	88.9	3.0
		Aluminum, Total	5580	4180	178	783.1*	3.0
		Arsenic, Total	166	1.4 u	178	93.1	3.0
		Barium, Total	231	59.3	178	96.4	3.0
		Beryllium, Total	3.4	0.14u	4.5	75.6	3.0
		Calcium, Total	9140	5910	2230	145.0	3.0
		Cadmium, Total	4.1	0.15	4.5	87.8	3.0
		Cobalt, Total	49.6	7.8	44.6	93.7	3.0
		Chromium, Total	23.9	8.6	17.8	86.0	3.0
		Copper, Total	36.3	17.7	22.3	83.4	3.0
		Iron, Total	24500	22800	89.2	1898 *	3.0
		Mercury, Total	1.5	0.05u	1.6	93.0	5.0
		Potassium, Total	2800	599	2230	98.7	3.0
		Magnesium, Total	5780	3840	2230	87.1	3.0
		Manganese, Total	381	288	44.6	208.5*	3.0
		Sodium, Total	2570	282	2230	102.7	3.0
		Nickel, Total	49.8	11.3	44.6	86.3	3.0
		Lead, Total	45.7	3.1	44.6	95.5	3.0
		Antimony, Total	28.6	0.81u	44.6	64.1	3.0
		Selenium, Total	144	1.6 u	178	81.0	3.0
		Tin, Total	84.0	1.6 u	89.2	94.2	3.0
		Thallium, Total	163	1.6 u	178	91.4	3.0
		Vanadium, Total	112	66.0	44.6	102.9	3.0
		Zinc, Total	91.6	50.9	44.6	91.3	3.0
		Zirconium, Total	437	20.7	446	93.4	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/30/08

CLIENT: TNUHANFORD RC-088 K1222 LVL LOT #: 0805L115

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16VC0	Silver, Total	0.27u	0.26u	NC	3.0
		Aluminum, Total	4180	3990	4.7	3.0
		Arsenic, Total	1.4 u	1.3 u	NC	3.0
		Barium, Total	59.3	67.3	12.6	3.0
		Beryllium, Total	0.14u	0.13u	NC	3.0
		Calcium, Total	5910	5800	1.9	3.0
		Cadmium, Total	0.15	0.13u	NC	3.0
		Cobalt, Total	7.8	7.5	3.9	3.0
		Chromium, Total	8.6	6.5	27.8	3.0
		Copper, Total	17.7	25.4	35.7	3.0
		Iron, Total	22800	22500	1.5	3.0
		Mercury, Total	0.05u	0.04u	NC	5.0
		Potassium, Total	599	687	13.8	3.0
		Magnesium, Total	3840	3440	11.1	3.0
		Manganese, Total	288	308	6.4	3.0
		Sodium, Total	282	277	1.6	3.0
		Nickel, Total	11.3	9.3	19.4	3.0
		Lead, Total	3.1	4.3	32.4	3.0
		Antimony, Total	0.81u	0.78u	NC	3.0
		Selenium, Total	1.6 u	1.6 u	NC	3.0
		Tin, Total	1.6 u	1.6 u	NC	3.0
		Thallium, Total	1.6 u	1.6 u	NC	3.0
		Vanadium, Total	66.0	67.1	1.7	3.0
		Zinc, Total	50.9	49.3	3.2	3.0
		Zirconium, Total	20.7	21.1	1.9	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/30/08

CLIENT: TNUHANFORD RC-088 K1222 LVL LOT #: 0805L115

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0214-LC1	Silver, LCS	48.2	50.0	MG/KG	96.4
		Aluminum, LCS	490	500	MG/KG	98.0
		Arsenic, LCS	953	1000	MG/KG	95.3
		Barium, LCS	482	500	MG/KG	96.5
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
		Calcium, LCS	2530	2500	MG/KG	101.0
		Cadmium, LCS	24.8	25.0	MG/KG	99.2
		Cobalt, LCS	246	250	MG/KG	98.2
		Chromium, LCS	49.5	50.0	MG/KG	99.0
		Copper, LCS	123	125	MG/KG	98.2
		Iron, LCS	500	500	MG/KG	100
		Potassium, LCS	2260	2500	MG/KG	90.3
		Magnesium, LCS	2400	2500	MG/KG	96.2
		Manganese, LCS	77.7	75.0	MG/KG	103.6
		Sodium, LCS	2330	2500	MG/KG	93.4
		Nickel, LCS	199	200	MG/KG	99.6
		Lead, LCS	249	250	MG/KG	99.7
		Antimony, LCS	283	300	MG/KG	94.2
		Selenium, LCS	925	1000	MG/KG	92.5
		Tin, LCS	492	500	MG/KG	98.4
		Thallium, LCS	944	1000	MG/KG	94.4
		Vanadium, LCS	253	250	MG/KG	101.2
		Zinc, LCS	98.6	100	MG/KG	98.6
		Zirconium, LCS	486	500	MG/KG	97.1
LCS1	08C0087-LC1	Mercury, LCS	4.8	4.7	MG/KG	101.6

Logbook #: 450

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0214
Date/Time Initiated: 5/27/08 1100
Date/Time Completed: 5/27/08 1730
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: HSL + B, Mo, Sn, Sr

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

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

TNI/NMED/HW 06/08 (P.E.)

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0804L984-001		1.24 gm	100 ml	<2	TO	fine	brown soil		
001R		1.13 gm							
001S	1.0 ml	1.25 gm							
08L0214-MB1	1.0 gm	1.23 gm				coarse	broken chips	~~roots~~	many fine roots MW 5/27/08
5 LC1	1.0 ml ✱☆	1.0 gm							
0804L033-001		1.23 gm					brown soil	roots	
W.E. 001R		1.20 gm							
MW 5/27/08 001S	1.0 ml ✱	1.25 gm							
002		1.48 gm							
003		1.20 gm						roots	
006		1.41 gm							RAD
008		1.35 gm							
0805L115-001		1.17 gm					dark brown soil	with oil	roots
001R		1.22 gm							
001S	1.0 ml ✱	1.18 gm							
002		1.31 gm							
003		1.24 gm						and many	
								~~water~~ steel	

MW 5/27/08

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

Reagent IDs:
HNO_3 E46025
HCL G05039
H_2O_2 E44A06
1:1 HNO_3 9787-077-04
1:1 HCL

File ID#: IC021401, IC021403, IC0214
LIMS Transfer: (Y) N Updated
Data Review By/Date: BMP 05/27/08

✱ and 0.5 ml 6072-078-01 (U-)
☆ and 0.5 ml 6072-076-05 (Zr)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: CEB
Date 5/19/08
Start Time/Temp: 1420 / 93°
End Time/Temp: 1450 / 98°

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

Prep Batch: 08C0087
Worksheet: HG052001
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	K17			10mL	50mL	
0.2 µg/L	KX	0.100				
1.0	H5	0.500				
2.0	871	1.000				
5.0	8	2.500				
10.0	L53	5.000				
ICV	C15	0.125	2.5			
CCV	DR	0.250	5.0			
ICB/CCB	1C					96.50
MB1	3C			0.30		MBS187 100.0
LC1	290	*	*	0.32		LCSS187 ⊥
0804L984-K17 001	81G			0.35		100.0
KX 001R	514			0.33		⊥
TE 0.5 5/19/08 H5 001S	L2	0.500	1.0	0.35		
0805L114-871 001	I4			0.33		R 100.0
8 001R	OF			0.31		⊥ ⊥
L53 001S	DX	0.500	1.0	0.33		
0805L107-C15 001	205			0.36		96.71
DR 002	997			0.37		94.83
1C 003	LV			0.38		92.13
0805L111-3C 001	H			0.34		95.41
290 002	P18			0.37		96.79
0805L119-81G 001	B2			0.33		92.7[illegible]
514 002	P5			0.30		91.47
L2 003	G7			0.35		94.81
004	11A			0.33		94.6[illegible]
0805L115- 001	A1R			0.33		94.91

Standard:	ID	Prep Date/Time
ICAL/MS	KI 6072-78-14B	5/19/08 1150
ICV/CCV/LCS	US 6072-78-15A	⊥

Reviewed By/Date: [signature] 5/22/08

see book # 936 Y for std traceability information

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

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: TLB
Date 5/19/08
Start Time/Temp: see page 009
End Time/Temp:

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

Prep Batch: 08C0087
Worksheet: HG052001
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0805L115-001R	F7			0.39	50mL	94.91
001S	WN	0.050	10.0	0.33	↓	↓
002	A4			0.35		95.4
003	401			0.34		
0805L126-001	JC			0.33		94.75
003	A9			0.35		94.01
004	6T			0.37		96.03
005	I94			0.36		95.01
0805L111-002R	JI			0.33		96.7
002S	818	0.500	1.0	0.37		↓
002T	BB	0.500	1.0	0.35	↓	↓

5/19/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	see page 009	

Reviewed By/Date: [signature] 5/22/

see book # 9368 for std traceability information

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

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

onville Laboratory Use Only

08052115

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

000000020

lient TNC HANFORD SAF# RC-088

st. Final Proj. Sampling Date

oject # 11343-606-001-9988-00

oject Contact/Phone #

onville Laboratory Project Manager O JOHNSON

c SW846 Del STD TAT 15 DAYS

ate Rec'd 5-13-08 Date Due 5-29-08

Refrigerator #			A 3														
#/Type Container	Liquid / Solid		16									1					
Volume	Liquid / Solid		250									1					
Preservatives												1					
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Tot Metal HS	CN	TPH-HCID					
						↓				Lionville Laboratory Use Only							
				8625H	OPCB					Met①		IIGN					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	T 16VC0			SOIL	5-6-08	0840		X	X					X		X			
002	T 16VC1			↓	↓	1010		X	X					X		X			
003	T 16VC2			↓	↓	1035		X	X					X		X			

Special Instructions: OILY SOIL

Met① = HSL + Sn, Zr

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5-13-08	1416

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-088-019	Page 1 of 1
llector 3. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9G
Data Turnaround 15 Days				
lect Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088	
Chest No. ERC-02-505	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080247		Bill of Lading/Air Bill No. See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ntamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	100mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions	TIED TO					B-12 Box #

Sample No.	Matrix *	Sample Date	Sample Time										
3VC0	OTHER LIQUID	5/6/08	0840	X	X	X	X		J16VD0		OILY SOIL		0272
3VC1	OTHER LIQUID	5/6/08	1010	X	X	X	X		J16VD1		OILY SOIL		0225
6VC2	OTHER LIQUID	5/6/08	1035	X	X	X	X		J16VD2		OILY SOIL		0226

RC 5/6/08

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Harries/E. Harries	1245 5/6/08	RTCoffman/RTCoffman	1245 5/6/08
TCOFFMAN/RTCoffman	1430 5/6/08	REFER #1A, 1060 BLDG	1430 5/6/08
260/1A	1015 MAY 12 2008	mstankouch	1015 MAY 12 2008
mstankouch	1015 MAY 12 2008		FedEx
FedEx	5/13/08 1416		5/13/08 1416

SPECIAL INSTRUCTIONS

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

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

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

JKD

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

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

CH-EE-011

000000021

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFOR

Date: 5-13-08

Project/SAF/SOW/Release #:

LvLI Batch #: 0805L115

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 798439379928
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3-6	°C	Cooler # ERC-02-505
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.

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1222

DATE RECEIVED: 05/13/08 LVL LOT # :0805L115

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC0						
% SOLIDS	001	S	08L%S049	05/06/08	05/15/08	05/16/08
% SOLIDS	001 REP	S	08L%S049	05/06/08	05/15/08	05/16/08
IGNITABILITY	001	S	08LFPA11	05/06/08	05/19/08	05/19/08
J16VC1						
% SOLIDS	002	S	08L%S049	05/06/08	05/15/08	05/16/08
IGNITABILITY	002	S	08LFPA11	05/06/08	05/19/08	05/19/08
J16VC2						
IGNITABILITY	003	S	08LFPA11	05/06/08	05/19/08	05/19/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088 K1222
LVL#: 0805L115

W.O.#: 11343-606-001-9999-00
Date Received: 05-13-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 3 soil samples.

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

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

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

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

5. The Laboratory Control Samples (LCS) were within the method criteria.

6. 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

6/10/08
Date

njp\i05-115

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 8 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Inorganic Data Summary Report
Physical Testing Observation

Client: TNU-HANFORD RC-088 K1222
LVL#: 0705L115

W.O.#: 11343-606-001-9999-00
Date Received: 05-13-07

Analyte:	**Observation:**
Ignitability	Samples J16VC0, J16VC1, J16VC1 duplicate and J16VC2 did not ignite. Samples were heated to approximately 220°F. p-Xylene was used to determined the accuracy of the flash point apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 81°F.

njp\i05-115.pt2

LIONVILLE LABORATORY INC.

onville Laboratory Use Only

08051115

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

000000006

lent TNU HANFORD SAF# RC-088

t. Final Proj. Sampling Date

oject # 11343-606-001-9888-00

oject Contact/Phone #

onville Laboratory Project Manager C. JOHNSON

CSL0846 Del STD TAT 15 DAYS

ate Rec'd 5-13-08 Date Due 5-29-08

Refrigerator #			A 3															
#/Type Container	Liquid / Solid		1G									1						
Volume	Liquid / Solid		250									1						
Preservatives												1						
ANALYSES REQUESTED →				ORGANIC							INORG							
				VOA	BNA	Pest/PCB	Herb				TCP Metal Hg	CN						

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
								06254	OPCB					MetO		IIGN			
001	J16VC0			SOIL	5-6-08	0840		X	Y					X		X			
002	J16VC1			↓	↓	1010		X	X					X		X			
003	J16VC2			↓	↓	1035		X	Y					X		X			

Special Instructions: Oily Soil

MetO = HSL + Sn, Zr

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5-13-08	1416

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL		COMPOSITE	
REWRITTEN		WASTED	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-019	Page 1 of 1

lector . Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 Days		
ject Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. ERC-02-505	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
nped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080247		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

tential Radioactive contamination, potential beryllium ntamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RTC 5/6/08	TIED TO					B-12 Box #
Sample No.	Matrix *	Sample Date	Sample Time								
6VC0	OTHER LIQUID	5/6/08	0840	X	X	X	X		J16VD0		OILY SOIL	0222
6VC1	OTHER LIQUID	5/6/08	1010	X	X	X	X		J16VD1		OILY SOIL	0225
6VC2	OTHER LIQUID	5/6/08	1035	X	X	X	X		J16VD2		OILY SOIL	0226

CHAIN OF POSSESSION	Sign/Print Names	
nquished By/Removed From Harries/E. Harries 5/6/08	Date/Time 1245	Received By/Stored In RTCoffman/RTCoffman 5/6/08	Date/Time 1245
nquished By/Removed From TCoffman/RTCoffman 5/6/08	Date/Time 1430	Received By/Stored In Reece #1A, 1060 BLDG, 5/6/08	Date/Time 1430
nquished By/Removed From 260/1A 1015	Date/Time MAY 12 2008	Received By/Stored In mstankovich	Date/Time MAY 12 2008
nquished By/Removed From mstankovich 1015	Date/Time MAY 12 2008	Received By/Stored In Fed Ex	Date/Time
inquished By/Removed From Fed Ex 5/13/08 1416	Date/Time	Received By/Stored In [illegible] 5/13/08 1416	Date/Time
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

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

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

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

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

CH-EE-011

000000007

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFOR **Date:** 5-13-08

Project/SAF/SOW/Release #:

LvLI Batch #: 0805L115 **Sample Custodian:** Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 798439379928
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3-6°	°C	Cooler # ERC-02-505
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.